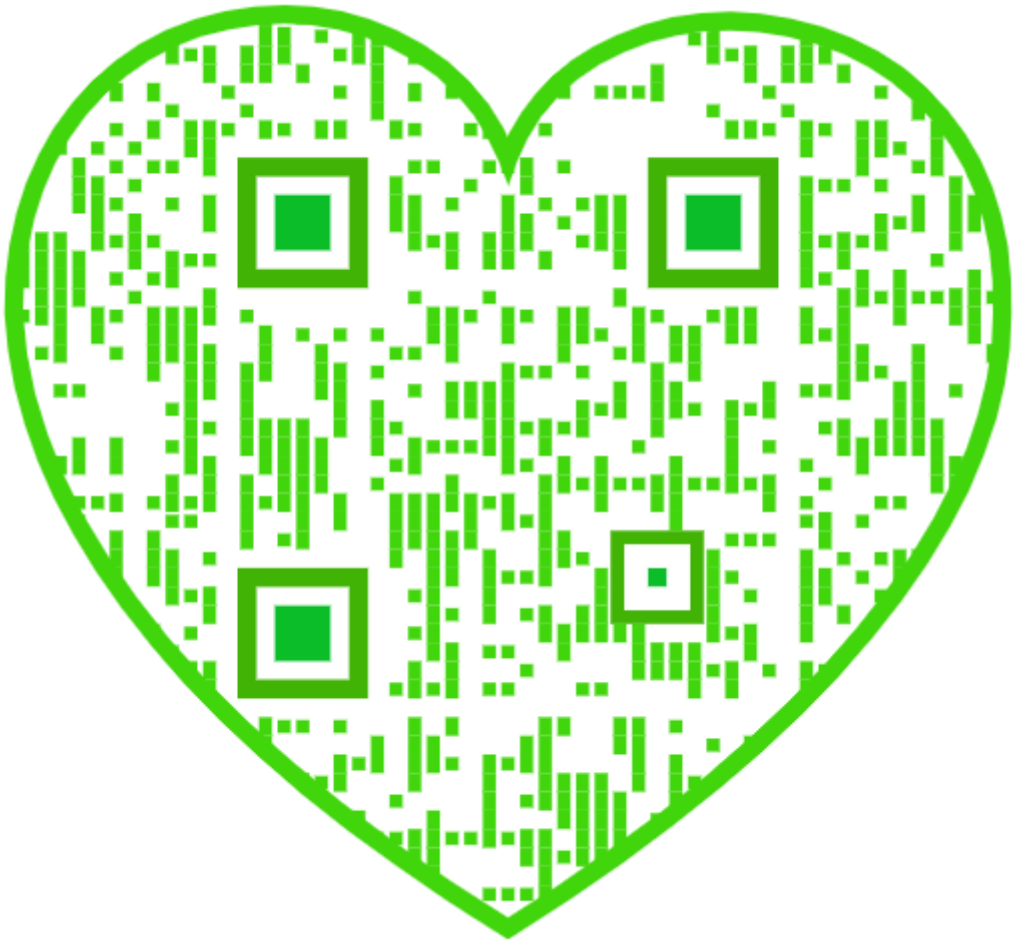

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THE ARCHITECT AND ENGINEER

OCTOBER 1934

...This month...

Work of the Association for the Advancement of Architecture in Los Angeles

■ ■ ■

FEDERAL HOUSING ACT AN OPPORTUNITY FOR ARCHITECTS

■ ■ ■

Some Interesting Features of the New San Francisco County Jail

■ ■ ■

TOP O' TOWN HOUSE THRILLS THOUSANDS

■ ■ ■

The Recent Small House Competition in Oakland

■ ■ ■

Unlicensed Person Cannot Advertise Himself a Designer, Court Rules

One Million Dollars a Day!

An official statement by Washington says a million a day is now being loaned under the National Housing Plan, which means . . . . .

Over a Billion a Year

That, in itself, says this same authority, will do a major part to bring the building industry and the heavy industries back to pre-depression prosperity. And the II and III part of the act is yet to be heard from!

★ ★ ★

here are your ANSWERS

YOU

—the owner of home or business property.

—the public spirited citizen who would do something for your community.

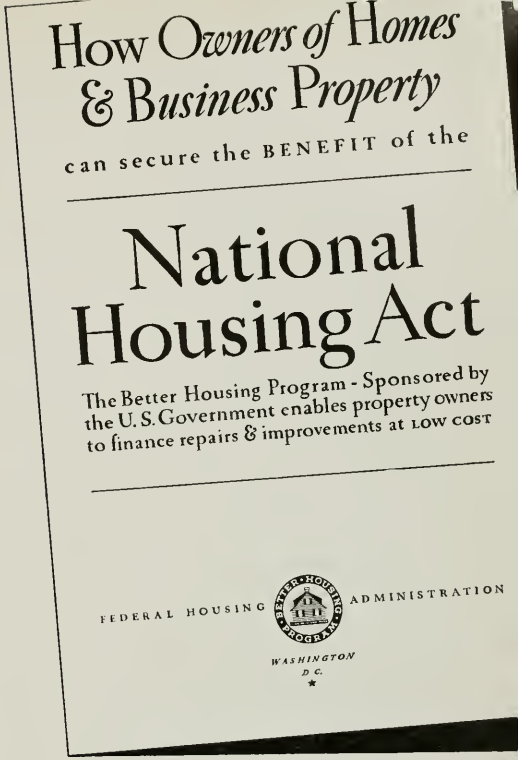
—architects, building supply and other merchants.

—manufacturers, advertising agencies and publishers.

will find in the following list literature, prepared by the Federal Housing Administration, how the National Housing Act can benefit you:

FHE-8	**Information Leaflet (Folder)**
FHA-101	**Property Owners Booklet**
FHA-102	**Community Campaign Booklet**
FHA-103	**Builders Booklet**
FHA-104	**Manufacturers Booklet**
FHA-106	**Community Planning Booklet**
FHA-107	**National Housing Act (Text)**
FHA-108	**Equipment Permitted or Excluded.**

Copies are available for the asking of The Architect and Engineer.


How Owners of Homes & Business Property
can secure the BENEFIT of the
National Housing Act
The Better Housing Program - Sponsored by the U. S. Government enables property owners to finance repairs & improvements at LOW COST
FEDERAL HOUSING
BETTER HOUSING PROGRAM
ADMINISTRATION
WASHINGTON D. C.

* FEDERAL HOUSING ADMINISTRATION *

Thumb Tacks and T-Square

WE would like to see this Federal Housing Act go over big. The newspapers are making lots of noise and the promotion committees have been very much on the job. But at this writing the rush to borrow money to put the old home in shape, has been nothing like a crowd waiting in line for football tickets. The reason for the public's apparent apathy must be its dislike for borrowing more money, and can we blame them? The American people are already fed up on loans—Federal, state, county, city and individual. All this borrowed money has got to be paid back some time —with interest. To borrow may be all right to relieve an emergency but we cannot go on living indefinitely on the other fellow's where with all.

⁂ ⁂ ⁂

PRESIDENT E. J. RUSSELL of the American Institute of Architects, thinks the profession has a real opportunity in the Federal Housing Act now in operation. The architect, he says, can demonstrate to the layman the value of expert advice.

To be sure there isn't much remuneration for the architect in this alteration work, but he has a chance to show his fellow citizens that his services are really helpful. His advice in the matter of alteration work should be a step up the ladder leading to his ultimate employment on more pretentious work. It puts him right in line for future commissions.

Warning that the architect must adjust himself to these new conditions, Mr. Russell declares that the Government's plans "can be made a nation-wide opportunity for putting the practice of architecture on a broader foundation than ever before." Human values, he asserts, will be an increasingly important factor in the architectural development of the nation.

For the remainder of 1934, and probably for all of 1935, the salvation of the individual architect, wherever he is located, lies in the field of residential reconditioning and residential new construction.

⁂ ⁂ ⁂

"THE architects can take it" is the conclusion reached through a nation-wide survey of depression influences in the architectural profession by the American Institute of Architects. Seeking to ascertain the morale of the profession after four years of stagnant conditions, the survey, directed by Stephen F. Voorhees of New York, chairman of the Construction Code Authority, disclosed evidence of "remarkable stamina and faith." Returns from a questionnaire showed, according to Mr. Voorhees, that the morale of the nation's architects can be summarized as follows: excellent, 25 per cent; good, 50 per cent; low, 25 per cent.

"The architect is an idealist and hard to discourage," said Mr. Voorhees.

⁂ ⁂ ⁂

THE fine results being obtained by the Association for Advancement of Architecture in Southern California, are graphically told by the association president, Herbert J. Mann, himself an architect, in another section of this month's ARCHITECT AND ENGINEER. San Francisco may well follow in the footsteps of the Los Angeles organization if one is to take seriously all of the things that Mr. Mann tells us have been accomplished in the South.

In the following few paragraphs we find a typical example of what the organization is accomplishing, not only for the profession but for the prospective home owner:

> Mr. and Mrs. W. R. Downie, a young Los Angeles couple, wanted a home of their own, but being limited for funds felt that their fond hopes were unlikely to be realized.
>
> Hearing of the Bureau, they dropped in "just to look around."
>
> Becoming interested in plans, they explained that they had some money available, but could not afford the amount they believed necessary. Further conversation convinced them an architect would help to solve their problem.
>
> Accompanied by the architect they looked at several lots and selected one. An agreement was made with the architect for plans; a full architectural fee being specified.
>
> The files of the Advisory Bureau aided them in selecting a suitable and satisfactory loan.
>
> Preliminary and final sketches and plans being approved, contracts were let and the house built.
>
> The home complete, the Downie's moved in. Soon after they were offered nearly twice as much for the place as they had paid for it.

⁂ ⁂ ⁂

BOTH the architects and engineers of California held conventions during the month—the former meeting in San Francisco, and the latter in Santa Maria. It was noticeable that a number of architects were at the engineers' meeting, but no engineers were reported as having attended the architects' convention. It would be a fine thing if the two professions got together in joint meetings once in a while and ironed out their little differences, for, after all, the services of both are needed if we are to have good buildings.

The engineer who lays out the structural features of a building is entitled to just as much prominence as the architect and the time may not be far distant when a client will commission both architect and engineer to design his building, instead of employing the architect alone and leaving it to the latter to engage an engineer—usually at an underpaid fee.

A NATIONAL PLAN

FREDERIC A. DELANO, distinguished architect, says:

"We believe that we are committed to the proposition that in so far as in us lies, it is our duty to give to every man the opportunity 'for life, liberty, and the pursuit of happiness.' Furthermore, our definition of liberty comprehends at least that *modicum* of self denial which grants to every man only so much liberty as will not infringe upon the just rights of his neighbor. . . . .

"National Planning, as I see it, must do something substantial for the underprivileged. This does not mean that we intend injustice to the favored few, but that we must invite and persuade the more fortunate in talents, be they talents of gold or talents of brains, to help those whose standard of living has been below normal.

"War, we know, makes a great appeal to most men, and yet it is not the killing of their enemies that allures men to enlist. . . They like . . . the enthusiasm of true comradeship. They like the idea of a single and clearly defined objective. . . They want a cause and a leader. Only when we have found some great moral objective worthy of our adoption, can we say that we have what William James chose to call *'the moral equivalent of war.'*

"That, as I see it, is necessarily the foundation stone of a National Plan: a plan which must be Physically, Socially, Economically and Spiritually adequate to the American people."

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VOLUME 119
NUMBER 1

THE ARCHITECT AND ENGINEER

OCTOBER
1934

NRA MEMBER U.S. WE DO OUR PART

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Contents

Frontispiece . HOUSE OF MR. AND MRS. ARMSTRONG, LOS ANGELES
Harold O. Sexsmith, Architect

TEXT

11 . . . . BETTER HOMES
Herbert J. Mann, Architect
19 . . . . SALVATION THE ARCHITECTS' OPPORTUNITY
Ernest John Russell, A.I.A.
23 . . . . JAIL
Homer F. Hadley, C.E.
27 . . . . STRUCTURAL PROBLEMS OF COUNTY JAIL
H. J. Brunnier, C.E.
37 . . . . TOP O' TOWN HOUSE
Horace G. Cotton, Landscape Architect
43 . . . . COMPETITION
Evalyn H. Merrill
45 . . . . LICENSE NEEDED TO ADVERTISE
47 . . . . ARSINE HAZARD
Professor Chas. A. Kofoid
53 . . . . SINCE 1744—BRICK VAULTS NEARLY TWO CENTURIES OLD
55 . . . . FOUNDATIONS
57 . . . . WITH THE ARCHITECTS
61 . . . . CHAPTER AND CLUB MEETINGS

PLATES AND ILLUSTRATIONS

11 . . . HERBERT J. MANN, ARCHITECT
12-13 . . . HOUSE OF MR. AND MRS. ARMSTRONG, LOS ANGELES
Harold O. Sexsmith, Architect
14 . . . HOUSE OF MR. AND MRS. W. R. DOWNIE, LOS ANGELES
Frank W. Green, Architect
16 . . . . HOUSE OF MR. AND MRS. T. J. PARKER, LOS ANGELES
Gable and Wyant, Architects
17 . . . . PERSPECTIVE, HOUSE IN SAN MARINO
Gerard R. Colcord, Architect
22-28 . . . SAN FRANCISCO COUNTY JAIL
Albert F. Roller and Dodge A. Riedy, Architects, Associated
H. J. Brunnier, Structural Engineer
29-35 . . HISTORIC AMERICAN BUILDINGS SURVEY—MISSION SAN ANTONIO DE PADUA, MONTEREY COUNTY
36-40 . . . TOP O' TOWN HOUSE, SAN FRANCISCO
O. A. Deichmann, Architect
43 . . . . FIRST PRIZE AWARD IN SMALL HOUSE COMPETITION, OAKLAND
Earl R. MacDonald, Architect
44 . . . . MODEL OF SAN FRANCISCO BAY BRIDGE
51-54 . . . GLOBE BREWERY AND 200 YEAR OLD VAULTS

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HOUSE OF MR. AND MRS. ARMSTRONG, LOS ANGELES

HAROLD O. SEXSMITH, ARCHITECT

THE ARCHITECT AND ENGINEER

OCTOBER 1934
VOLUME 119
NUMBER ONE

Owners and Architects of the Houses here illustrated were brought together through the Association for the Advancement of Architecture

Better Homes

by Herbert J. Mann

TODAY there is a nation wide cry for some solution to the difficulties that are obstructing the country's home - building industry. The need is felt chiefly in three directions: by millions of poorly housed people, by the building industries, and by the building professions.

The National Housing Act, recently enacted, is official recognition of the primary importance of this work to the economic and social well being of the nation. With the Act in operation as it is now, financing for homes is easier, but the Act does not appear to have solved many major difficulties that have steadily strangled small house building during the past ten years.

Small houses comprise the bulk of residential building. As only 25 per cent of the population get $2,000 or more per year, houses costing up to $5,000 spell "home" for 75 per cent of all families. The present governmental concern with small homes and with the welfare of the worker indicates great activity in small houses during the next several years.

HERBERT J. MANN, ARCHITECT
Originator and President, Association for Advancement of Architecture, Los Angeles

Here, too, the need is greatest. James S. Taylor, of the Department of Commerce, pictures a present necessity of 800,000 homes. He states that the number of single family

dwellings erected from 1923 to 1933 was 2,439,000; that the average for the first five years was 493,000 per year. But in 1933 only 35,000 houses were built.

In one typical city, Los Angeles, an investigation of building permits reveals that there has been a steady drop in home building since 1923. In that year there were 19,509 single homes built, and the population was 802,358. In 1933 the population had climbed by 50 per cent to 1,281,266, yet the number of houses built was only 1,616.

A vast vacuum of need for modernly adequate houses is shown by these figures. This huge dam of need will burst upon the market the moment that primary bodily needs can be satisfied.

The danger is that when this happens the same story will be told that was recited during the 1920's: Hopeful families, wanting homes, were exploited by every kind of ignorant, cheap and tricky practice. The public suffered financially and socially. Architecture and all the arts received a deadly blow—given by blighting masses of ugly, cheap houses.

HOUSE OF MR. AND MRS. ARMSTRONG, LOS ANGELES
Harold O. Sexsmith, Architect

Professional Advice Needed

The Committee on Homemaking (of the President's conference on home ownership) shows that we cannot have good housing in any reasonable time so long as we leave its development to the processes of natural evolution. The adaptations of Nature require generations; our modern environment may change several times in a single generation. Passive acceptance of homes as we find them must be replaced by consciously

molding them to our needs. The scientific method must be brought to bear on housing and homemaking.*

There is much bad taste in furnishing, as there are mistakes in the location, design, construction and financing of homes, since the home owner and homemaker have nowhere to turn for authoritative, disinterested, and complete advice on their problems. Education in standards is fundamental to any program of housing reform but improvement will be slow. If every community had a home information center, a housing clinic, where each man and woman could get practical advice, rapid advance could be made."*

The practical solution of the problems which have disorganized the field of small house building must be two fold: It must reach the public in terms that that public can understand. Then it must bring the public's needs before the attention of professional men who have devoted their energies to the study of solutions for such problems. It must see the small home builder's needs sympathetically, from the low income side of the fence in terms of dollars and cents. And then it must aid the professional man in fulfilling that need with a reasonable return to himself.

Fulfillment of these requirements is essentially a single job, for the solution of one will simultaneously aid in solving the other. If authoritative and unbiased information is placed in the public's hands

HOUSE OF MR. AND MRS. ARMSTRONG, LOS ANGELES
Harold O. Sexsmith, Architect

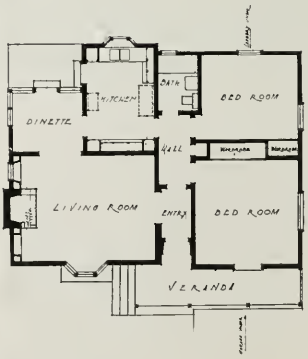
* *Homemaking, Home Furnishing and Information Services*, report to the President's Conference on Home Building and Home Ownership, 1932, P. IX.

* Ray Lyman Wilbur in foreword to the same.

Photo by Associated Photographers, Inc

HOUSE OF MR. AND MRS. W. R. DOWNIE, LOS ANGELES
Frank W. Green, Architect

LIVING ROOM, HOUSE OF MR. AND MRS. W. R. DOWNIE, LOS ANGELES
Frank W. Green, Architect



PLAN, HOUSE OF MR. AND MRS. W. R. DOWNIE

when that information is needed, then the professional man will be able to serve such jobs profitably—due to elimination of time ordinarily wasted in overcoming fear, due to improvement in routine resulting from greater volume of small house work, and due to the use of new methods, new materials and more efficient processes, made possible by concentration on this type of job.

Solve Small House Problem

The Association for Advancement of Architecture is such a practical solution of the small house problem. It is a non-profit organization, whose directors have no commercial interest in the building field, and who serve without compensation in the furtherance of its social ideals. The managers devoting their entire time to its work are on a salary basis. This association operates in two major ways:

It serves as a clearing house of information about housing and home subjects. It is a centralized service to the local agencies for the dissemination of educational matter. Also it conducts research, arranges for educational displays and publicity about homes.

Its second activity is the organization and supervision of local information and advisory bureaus. These are the major part of its educational work, for these reach the public directly. The work of the first bureau, the Architects' Exhibit and Advisory Bureau in Barker Bros. Building at Los Angeles, is typical of the results obtained.

This bureau has operated successfully for two years. It has been visited by 30,000 people. Here are shown outstanding examples of architects' house designs. The prospective home builder is encouraged by a friendly reception and by the absence of sales tactics, to discuss frankly his problems—the kind of home he wants, his resources, his needs. Here is nothing to be sold; here is no bias to the information given. His confidence is secured and he is encouraged to ask advice. In return he is given the best guidance that present knowledge of home building makes possible.

His questions regarding any phase of a building project are answered directly and without bias. The sole purpose of this bureau is to insure that the public gets the best that the building industry affords for every dollar spent.

Home Owner Needs Guidance

The home owner must have guidance through the many processes of building. He must be directed first through the maze of preliminary work to determine his own relation to the house he will build—budgets, capacity to pay, site, needs and selection of architect. In this the bureau assists. Then he must be steered through the tortuous channels of actual home building, and in this he requires an expert pilot. That expert is the architect, for he alone has

SATISFIED

Soon after moving into their new home the Downies wrote the Association for Advancement of Architecture, the following unsolicited letter:

Dear Mr. Mann:

I wish to thank you and the members of your organization for all the services which I have received from you. . .

It was a lucky day for the Downie family when we happened to visit your exhibit. We had, as you know, only a very small sum at our disposal, and we needed to get the utmost for every dollar. . .

I had always thought that architects were rather an expensive luxury for the wealthy but I have since discovered that a good architect is an absolute necessity for the small home builder. . .

Our architect, Mr. Frank Green, whom we met at your exhibit, helped us select the lot, secured the building loan and desgined and supervised our home. . .

Our house and lot cost less than $3,000 and we were offered $5,000 cash before its completion. Altho this was a tempting offer we were so much in love with the place that we refused to sell it even for so large a profit. . .

I am pleased to tell all of my friends about the wonderful service you are rendering and wish you and your associates all the success in the world. . .

Yours very truly,
(signed) Mrs. W. R. Downie.

HOUSE OF MR. AND MRS. T. J. PARKER, LOS ANGELES
Gable and Wyant, Architects

LIVING ROOM, HOUSE OF MR. AND MRS. T. J. PARKER, LOS ANGELES
Gable and Wyant, Architects

PERSPECTIVE, HOUSE IN SAN MARINO, CALIFORNIA
Gerard R. Colcord, Architect

made a comprehensive study of the best courses. Without such direction the home owner is wrecked amid the confusion of advertising claims about real estate, plans, design, financing, contracting, materials, supervision and landscaping. He must be counselled by authoritative and unbiased experts if he is to get full value for his money in terms of "home."

Without this help the home owner usually goes to the speculative builder to buy a ready-built house—and this is the practice that has blighted our country with flimsy, tasteless and wasteful shelters. "Our technical advances have enabled us to produce dwelling places for the masses; but homes cannot be standardized, as can bricks and doorknobs. Even when we produce shoes at wholesale, we expect eventually that each wearer will be fitted individually. Houses as dwelling places for developing personalities, as homes of families, need also to be considered in their organic relations, and more deliberately planned with a view to the remoter purposes of human living." For social and economic betterment of the lower income groups the public must be enabled to use the services of competent architects.

Full information about budgets, costs and methods insures that the public will get the optimum house for its money, and that the house will not suffer extravagant depreciation or deterioration.

Of the 30,000 people who have visited this Los Angeles bureau of the association, 80 per cent are found to be dreaming of a house of their own "sometime." For many the recitation of circumstances has shown that immediate building of this home is possible, safe and profitable. Others have been enabled to plan definitely for future

building. Still others have been restrained from overburdening themselves with a house they could not afford.

When the importance of the home in the mental health of the family is considered, this work is seen to have far reaching social benefits.

Objectives of the Association

The stated objectives of the Association for Advancement of Architecture are:

1. To assist in the preservation of natural scenic beauty by acquainting the public with the economy and advantages of good architecture; to encourage the remodelling of unsightly buildings and structures in accordance with sound architectural practice.

2. To promote the study of improved methods and design, and to facilitate the more general use of good architecture in residential construction.

3. To encourage the improvement of home grounds, and the business, factory and other areas, through correct planning and planting, in accordance with landscape architectural principles.

4. To stimulate the proper planning of towns, cities and regions, in accordance with the principles of city and regional planning.

5. To maintain architectural advisory bureaus and exhibits for the information of the public.

6. To encourage more general use of paintings, sculptures, and the allied arts in connection with architecture.

7. To encourage and assist activities of a similar nature or the work of other organizations that contribute to the advancement of architecture or the cultural life of the community.

8. To encourage and assist in the preservation of historical buildings and structures.

9. To perform any other service which may be deemed appropriate in carrying out the purposes of this organization.

In plan, and in the work accomplished during the two past years, this association is working directly toward the fulfillment of the recommendations made by the President's Conference on Home Building and Home Ownership. Its socal results in terms of family welfare, and its artistic achievements in the improvement of small house design, warrant the support of civic minded citizens in the furtherance of its ideals.

In this low cost field the association is achieving large results. By overcoming fear, by showing the profitable advantages of an architect's services, and by guiding the public directly and without waste effort, this organization has greatly lowered the size of job that the architect can profitably serve. "Every time $500 or $1000 is cut from the cost of a home, a new market is opened," states *Better Homes Manual*. For every $1,000 that is taken from the size of project that architects can handle, the market for architectural services expands 400 per cent.

A Field for the Architect

We see today the grim spectacle of an architectural profession that cannot find sufficient work for its members and for the graduates of its schools; while the masses of our people live in houses which in point of planning and design can be termed mid-Victorian; houses that not only fail in their duties as homes, but which actively contribute to the mental and physical illness of their occupants. The Association for Advancement of Architecture is opening this vast field to architects.

America must adopt some plan for the solution of the small house problem. Architecture is the mother of the arts; it calls for and inspires all others. It is fitting that socially minded individuals and organizations should rally to the support of this movement to resuscitate the standard of living and the standard of taste of the nation.

Salvation

The Architect's Opportunity

by Ernest John Russell, A. I. A.

THE members of the American Institute of Architects are entitled to the best information available as it concerns the practice of architecture; and to the best judgment of their officers as to conditions of practice in the immediate future.

There has been no recent opportunity for me to consult with the other officers, so what I have to say in this statement is based upon my own observations, and upon a knowledge of conditions obtained from numerous visits to Washington since the last convention.

For the remainder of 1934, and probably for all of 1935, the salvation of the individual architect, wherever he is located lies in the field of residential reconditioning and residential new construction.

The prospect of large scale private building constrution, or of state and municipal building construction not already contracted for, in the period stated, is negligible. No matter what is done in national economics there will be no general renewal of private building construction prior to 1936—except with Federal aid.

Many architects of courage and faith have lived on the hope that suddenly their old practice would come back, and that some quick improvement in the national welfare would bring to their boards the large projects and the splendid opportunities which they had in 1929. Such is not to be the case. Each of us should face that reality.

If we are to continue in practice as architects we must now discard some conceptions of what constitutes architectural practice, which have been deluding us for the past four years.

This is not to say that the architectural profession is going to be wiped out. Quite the contrary! The independent practicing architect in a typical American community will be just that in 1936—and thereafter. But he will be the architect who had sufficient imagination and fortitude in 1934 to adjust himself to new conditions.

These new conditions have to do with the functions of the architect, and their purposes in the community.

It is apparent that human values, based on security of employment and sufficiency of environment (decent housing conditions), are going to receive increasing attention and substantial enhancement in the immediate future. If the architect is to have his rightful share in this new program he must grasp the theory that his function in the community is as definite and as essential as is the function of the physician or lawyer. He must so conduct his practice, he must so approach prospective clients, and he must render such type of service as to gradually build up the popular impression that no citizen should think of building a house, or modernizing a house, or reconditioning a house, without first securing the advisory, or the complete technical service of some competent architect in his community. If the citizen about to build or repair but knew it, an hour of consultation with an architect as to what he thought he wanted to do, as to how it should be done, and as to who should do it, would assure him a substantial saving in money, a better piece of work, and a higher standing of good taste. But Mr. Average Citizen will never know these things unless the architect tells him.

The rapidly developing program of the Federal Housing Administration offers to practically every architect in this country an opportunity to re-establish his practice in a new field, and to make a good living during this critical period in which we live. It also offers him an opportunity to establish a reputation in his community as a professional adviser on every building operation, no matter how small, for which the owner hopes to get the full value of his dollar. In fact, this Federal housing program can be made to be the salvation of the architectural profession. It can be made a nation-wide opportunity for putting the practice of architecture on a broader foundation than ever before.

The Institute in Washington, through its officers and executive secretary, has ably and almost daily presented the value of architectural service to the officials of the Federal Housing Administration. They have received most courtous attention, and hours of valuable time from Administrator Moffett; Deputy Adminstrator Deane; the Chief of the Technical Division Miles Colean; and from a score of other key men who are charged with responsibility for this tremendous undertaking, which will soon cover not only repairs and remodeling but new residential construction.

All of these men are convinced of the value and the desirability of architectural advice and service for those who borrow money from the banks under the F. H. A. guarantee. They have stated, with wisdom, that they *cannot* dictate to the banks, or to the borrowers, that architects must be employed. They wish to encourage such employment, but the desire for it must be expressed by those who have borrowed money with which to repair or build. They cannot *require* the employment of architectural service any more than they can dictate other types of service, or specific products.

Therefore, it is up to the individual architect to adopt a consistent and vigorous course which will give him a part in this housing work in his community.

In a new brochure issued by the Administration, entitled "Community Campaign" a section is devoted to the procedure for organizing a local Better Housing Program.

It contains a typical organization chart which offers many opportunities for participation by any number of architects. It sets up committees on finance, loans, publicity, building industry, general industry, planning, and consultation.

The section on the building industry committee is quoted "Function: to contact all building material and equipment manufacturers, distributors and dealers; all *architects*, builders, contractors, sub-contractors and others engaged in the local building industry, and to enlist and direct their active support in the campaign. Chairman should be leader in local building industry."

The section on the planning committee is quoted "Function to work out *plans for improvement of community as a whole* and for long-range improvements under Better Housing Program."

It has been stated to representatives of the Institute by Director Moffett that ultimately there will be 15,000 local Better Housing Programs under way, each one under the guidance of a local committee.

The implications of that statement; the opportunities for participation by the architect, as set forth in the Housing Administration documents; and the qualifications of the architect to assume leadership and secure participation are obvious.

If no "Better Housing Porgram" has been organized in your community, your Chapter, or you as an individual, should take the lead in organizing it. If it has been organized, you as a practicing architect, should get in touch at once with the building industry committe and with the planning committee for the purpose of taking part in the work, as the professional man best qualified to advise in all building operations, no matter how small .

As to fees, their determination is up to you. But bear in mind that the loans for modernization and repair are made at a low rate of interest, for badly needed work, to people in distress who would not ordinarily employ architects.

If enough of these borrowers become your clients—for general consultation; at their homes or at your office; if by your initiative you have convinced them of the value of your knowledge and ability in getting them the best for their money: Then you should be able to render an advisory service at so much per visit, and without reference to the customary fee for repair and alteration work. (Obviously the architect who asks a $100 fee from a prospective client for advice and/or service on repairs estimated to cost $1,000 will make a mistake—both for himself and for his profession.) While the average project will not require other than advisory service there may be some projects which will require full architectural service, and should be charged for accordingly.

This is not to say that the schedule of charges of the Institute should be broken down, or disregarded. It is to say that the architect should be wise enough and able enough to adjust his type of service to the advantage of the client, charging him a fee in scale with the project and individual conditions. Long ago the doctors solved a similiar problem.

Those architects who have open minds should find herein suggestions of value and encouragement.

If you are interested—broaden your view as to architectural practice. Then take immediate and persistent action in your own community.

Not the least reward will be for the future—in the good will of many clients, and in the recognition which will be accorded to you by your community.

Photo by Moulin *MacDonald and Kahn, General Contractors*

SAN FRANCISCO COUNTY JAIL, SAN MATEO COUNTY

ALBERT F. ROLLER AND DODGE A. RIEDY, ARCHITECTS, ASSOCIATED
H. J. BRUNNIER, STRUCTURAL ENGINEER

Jail

by Homer F. Hadley

WHENEVER jails are mentioned we are wont to have unpleasant feelings and emotions. We picture in our minds ugly massive buildings with narrow windows barred and cross-barred; loss of freedom to come and go; confinement; coarse fare; unwelcome associates and guards; rules and orders of a brutal, unfeeling, callous sort; the utter dregs of life.

Back through the centuries jails have been places of unhappiness and of punishment, of woe and misery and suffering and all too often of cruel dire oblivion—places above whose portals might well have been inscribed the ominous warning at the entrance to Dante's inferno: "All hope abandon ye who enter here."

Bad as many such places are today it is some measure of mankind's improved civilization and culture that gradually the treatment of offenders, either weak or criminal, is becoming ameliorated. Restraint and punishment there must be while soft and silly kindness there must not be. But the harsh brutality that once characterized imprisonment no longer is as prevalent as formerly and the prisons themselves improve and become more humane.

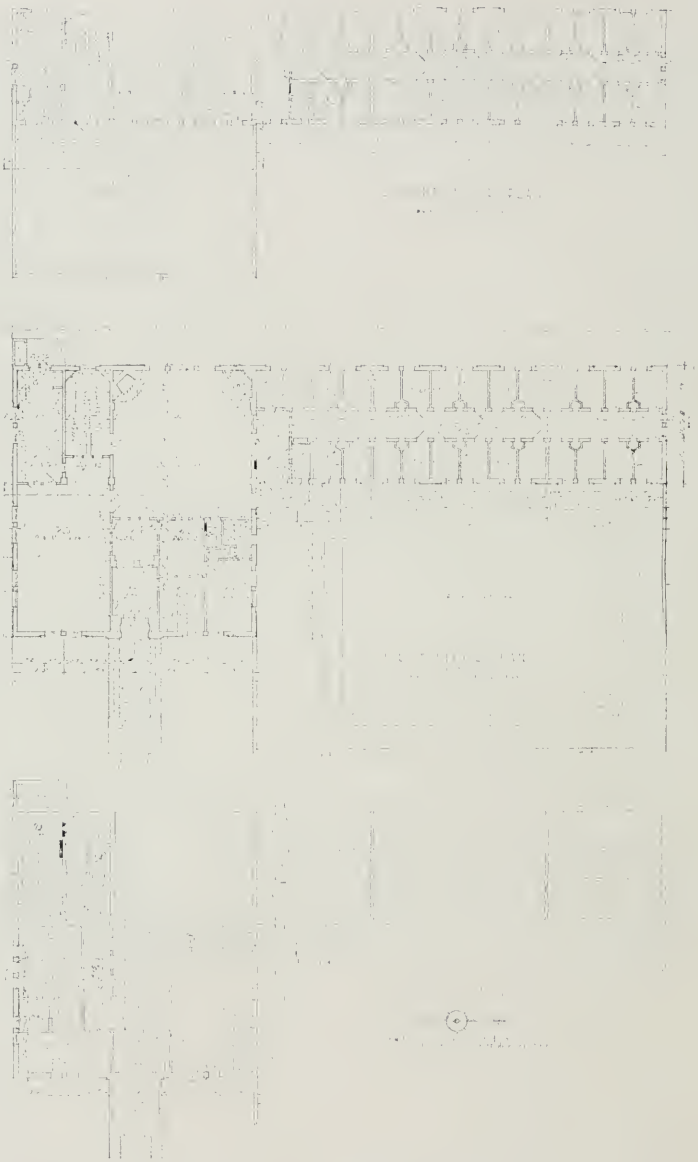
A Creditable Design

San Francisco's new jail is a truly notable institution in this respect and it is a credit to the community which built it. Its function is, indeed, confinement and imprisonment, but these purposes are accomplished decently and properly and with a minimum of offense and humiliation to the prisoners. The cells are single, individual units located against the exterior walls with a window to each cell, an arrangement that provides a maximum of sunlight and daylight for the prisoners. While the windows include horizontal bars of tool-resisting steel and while the metal sash itself is built of the same material, nevertheless the old familiar heavy vertical bars with all their offensive suggestions are conspicuously absent. Each cell has its individual toilet facilities and a simple metal cot to receive mattress and bedding. The buildings are mechanically ventilated with automatic regulation of temperatures.

Two hundred and fifty acres of farm and grounds surround the buildings. The large main structure is for men, the upper four stories providing accommodations for 480 prisoners. Each wing of each floor has two banks of 30 cells against its outside walls. On the next lower floor, the second of the building, each wing consists of a dormitory of 60 beds for the prison guards and trusties. Both hot and cold water for washing purposes are provided on this floor but above there is cold water only.

Central Tower Features

The central tower portion of the main building rises to a greater height than the



PLANS, WOMENS' UNIT, SAN FRANCISCO COUNTY JAIL
ALBERT F. ROLLER AND DODGE A. RIEDY, ARCHITECTS, ASSOCIATED

wings and in this higher portion is housed the mechanical equipment, etc. From the sixth or upper cell floor down to the second, there is a large open shaft or well in this central tower portion, surrounding which the stairs and elevators are located. It is at this central place and only at the focal point at the second floor that access to the entire upper portion of the building is had. There are no stairs or fire escapes at the ends of the wings and everyone going to or from the zones of confinement must pass the scrutiny of the guards stationed at the central tower, second floor.

On the first floor of the building are the kitchen, bakery and various rooms for storage of equipment and supplies. Meals for the inmates are served in the cells. There is no congregating and meeting in central mess halls. Below the kitchen in the south wing is the garage, boiler room, etc. The first floor in the north wing rests directly upon the ground.

In front of the main portion of the building and integrally connected with it is the two-story administration unit and the connecting three-story service unit. Here is the approach to the building, with its administrative offices, inmate receiving rooms, visiting rooms, barber shop, shower and dressing rooms, chapel and class-rooms and all the space required for the proper medical and dental care of the inmates.

Fireproof Construction

Because of its occupancy and of the prospects for its steady and long-continued use, and also because of its limited central egress, fireproof construction was assuredly necessary. The entire building, both walls and floors, is of reinforced concrete. The floor framing in the wings consists of single 31-ft. span beams or girders, spaced 10'-6" o. c., which extend without interior supports from wall to wall. The exterior walls are 18 inches thick, giving the upper portion of the wings an out to out dimension of 34 feet. The building is practically 400 feet long from end to end. It is built as a single monolithic unit without any expansion joints. The first story is of 10-ft. greater width, and length, than the upper stories. The central tower rises to a height of 105'-5" above the ground in front of the administration unit; the wings to a height of 76'-9" above the same datum.

Matched 1x6 forms with mitered corners were used for the exterior. The spandrels are given a dark olive green color. The piers are made buff in tone by means of a wash. Plywood panels were used for the forms on the inside of the walls. These, having been given an oil primer, were colored to a light gray green shade by two coats of lacquer. The same treatment was applied to the concrete of the underside of the floors, a very pleasing effect being obtained.

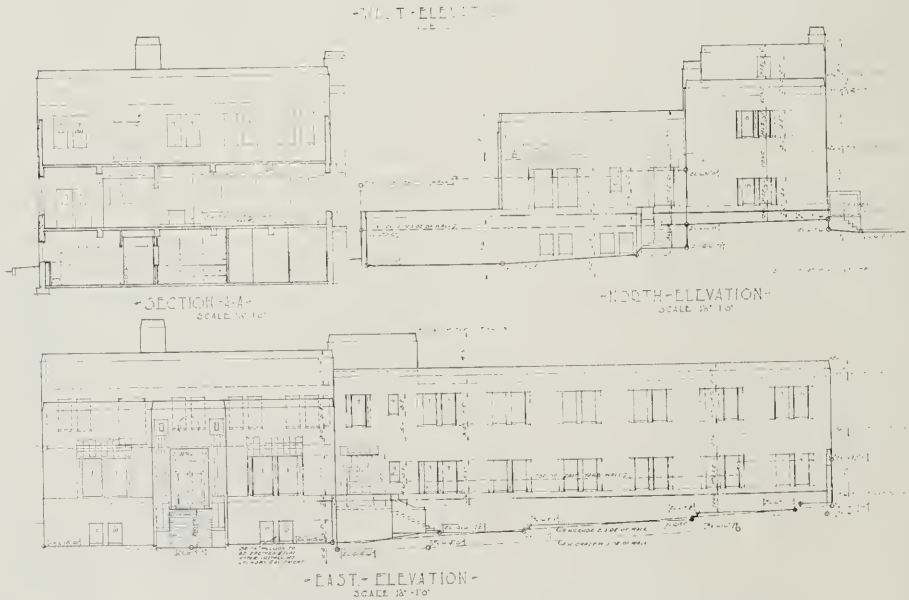
The Women's Building

For women there is a much smaller building, located at some distance from the main building, having accommodations for 48 inmates. In general it follows closely the features and construction of the main building.

CELL CORRIDOR, SAN FRANCISCO COUNTY JAIL

MacDonald and Kahn, General Contractors

WOMEN'S UNIT, SAN FRANCISCO COUNTY JAIL
Albert F. Roller and Dodge A. Riedy, Architects, Associated



ELEVATIONS, WOMEN'S BUILDING, SAN FRANCISCO COUNTY JAIL
Albert F. Roller and Dodge A. Riedy, Architects, Associated

In the farm group are stables, corrals, sheds and a green house for the propogation of young plants and vegetables. These structures are also of reinforced concrete. There is a sewage disposal plant with all units in duplex, including dual chlorination.

Both men's and women's buildings are equipped with a complete radio broadcast and address system through which, from a central office, orders or instructions may be issued to any of the personnel or inmates. Additional to this is a silent code signal system and a house phone system for use of the guards.

Not a Penitentiary

This prison is not a penitentiary. It is intended for "secondary confinement" i.e., for terms of comparatively short duration, 30 days to a year in length.

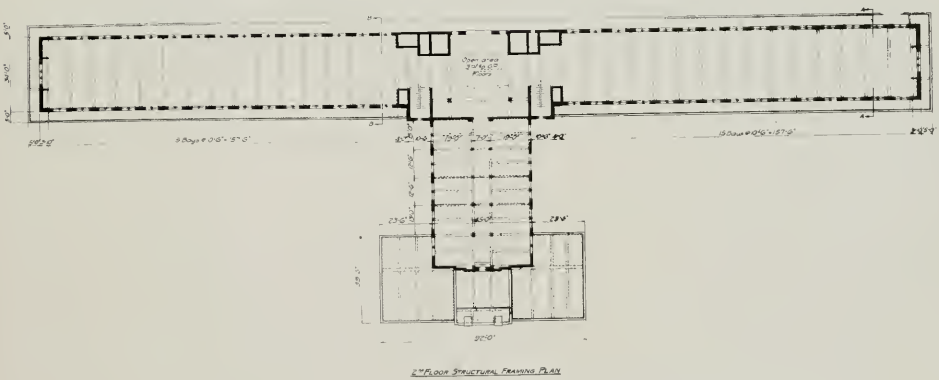
In conclusion let it be repeated that it is an institution of which the City and County of San Francisco may well feel proud. It is clean, sensible, well-ordered, well-arranged, well-lighted, well-ventilated and while it accomplishes its purpose of imprisonment quite as effectively as any hell-hole of past ages has done, it does it decently and in a respectable, inoffensive manner. It is a fine work.

Structural Problems

County Jail

by H. J. Brunnier, C. E.

IN planning any structure the first consideration must be utility. That is, the building must be so designed as to serve efficiently and economically to the fullest extent the purposes for which it is intended to be used. Concurrently with utility, proper consideration must be given to stability in order that the structure will resist the elements and forces of nature, that is, deterioration, wind, earthquakes, etc. At the same time, without jeopardizing utility or stability, a structure should be so constructed as to be pleasing to the eye.



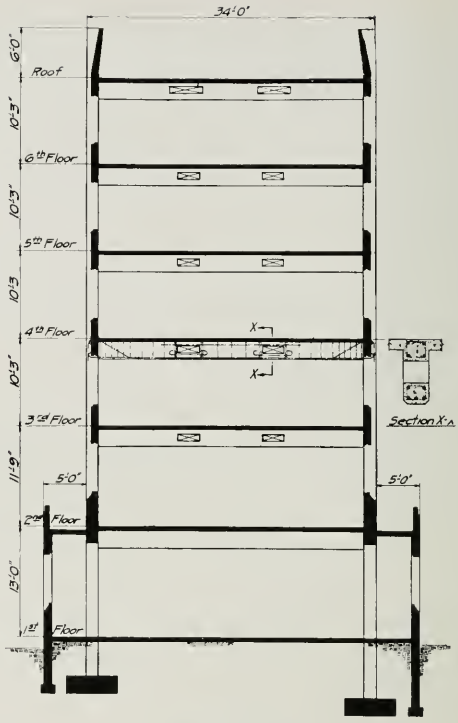
SECOND FLOOR STRUCTURAL FRAMING PLAN, SAN FRANCISCO COUNTY JAIL
H. J. Brunnier, Structural Engineer

The men's building of the San Francisco County jail is of reinforced concrete throughout and numerous complicated structural problems had to be coped with in order to meet the carefully studied utility requirements of the structure as they were developed by the architects and the sheriff. The plan required a long, narrow cell block construction, 44 feet wide and approximately 407 feet long for that portion up to the second floor, and 34 feet wide and 397 feet long for that portion above the second floor. Attached to this cell block at the center in the long direction is a "T" shaped two-story administration building, with the elevator shafts, stairs and open communication well located in the cell block at the junction of the two buildings. This increased the difficulties of the problem of structural stability for the lateral forces that had to be assumed because of the close proximity to the San Andreas fault. By taking advantage of all interior walls which of necessity were required to be of concrete it was possible to design for a minimum lateral force of 20% gravity at normal stresses.

The cell construction desired was such that interior columns could not be used, thus necessitating deep girders. Furthermore these cells are of the small individual occupancy type and it is obvious that economy required the minimum story heights. Mechanical ventilation is necessary and structural details were developed permitting the air ducts to pass through holes in the concrete girders.

Economical Construction

The above items are only a few of the many structural problems that were satisfactorily and economically solved by intensive studies and close cooperation with the architects. This cooperation also effected considerable economy, in that all the concrete for architectural purposes was used to the fullest extent in developing the structural stability.



CROSS SECTION THROUGH CELL WING, SAN FRANCISCO COUNTY JAIL
H. J. Brunnier, Structural Engineer

On account of the geological formation of the site the location of the building presented another problem. Disintegrating standstone, not subject to active erosion as found in this area, weathers deeply, first breaking up into small angular pieces which gradually decompose and break down into smaller fragments and some of which changes chemically to become clay. The final stage of weathering is residual soil which covers the bedrock to varying depths depending on the steepness of the local and adjacent slopes. Beneath the north wing

[Turn to Page 54]

HISTORIC AMERICAN BUILDINGS SURVEY

NATIONAL PARK SERVICE
U. S. DEPARTMENT OF THE INTERIOR

DISTRICT NO. 38
IRVING F. MORROW
DISTRICT OFFICER

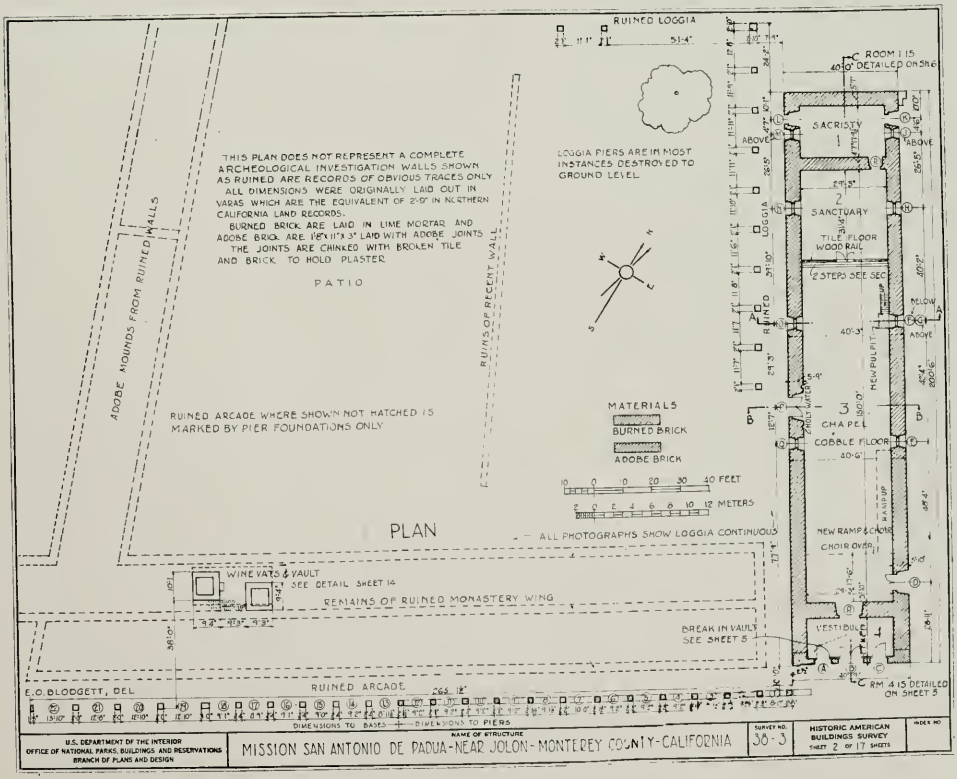
MISSION SAN ANTONIO, NEAR JOLON, MONTEREY COUNTY

Portfolio Number Five

Mission San Antonio de Padua,
Monterey County

MISSION SAN ANTONIO DE PADUA IS SITUATED IN A FERTILE VALLEY OF THE COAST RANGE IN THE MOUNTAINS NORTHWEST OF JOLON, MONTEREY COUNTY. THE MISSION WAS FOUNDED IN 1771 BY FATHER SERRA AND THE PRESENT BUILDINGS WERE STARTED IN 1810 AND LARGELY COMPLETED IN 1813. OF THE ORIGINAL CLOISTERS ONLY PART OF THE FRONT ARCADE AND A FEW PIER FOUNDATIONS NOW REMAIN.

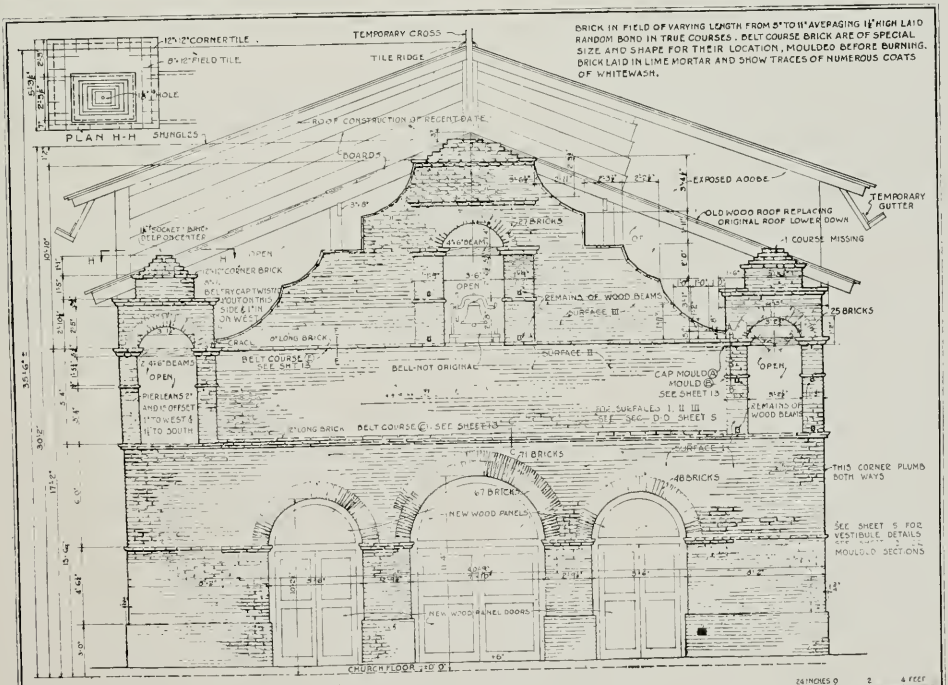
PLAN, MISSION SAN ANTONIO DE PADUA, MONTEREY COUNTY, CALIFORNIA.



RUINED LOGGIA
THIS PLAN DOES NOT REPRESENT A COMPLETE ARCHEOLOGICAL INVESTIGATION WALLS SHOWN AS RUINED ARE RECORDS OF OBVIOUS TRACES ONLY
ALL DIMENSIONS WERE ORIGINALLY LAID OUT IN VARAS WHICH ARE THE EQUIVALENT OF 2'-9" IN NORTHERN CALIFORNIA LAND RECORDS.
BURNED BRICK ARE LAID IN LIME MORTAR AND ADOBE BRICK ARE 1'8"x11"x3" LAID WITH ADOBE JOINTS
THE JOINTS ARE CHINKED WITH BROKEN TILE AND BRICK TO HOLD PLASTER
PATIO
LOGGIA PIERS ARE IN MOST INSTANCES DESTROYED TO GROUND LEVEL
ADOBE MOUNDS FROM RUINED WALLS
RUINS OF RECENT WALL
RUINED ARCADE WHERE SHOWN NOT HATCHED IS MARKED BY PIER FOUNDATIONS ONLY
MATERIALS
BURNED BRICK
ADOBE BRICK
10 0 10 20 30 40 FEET
2 0 2 4 6 8 10 12 METERS
PLAN
ALL PHOTOGRAPHS SHOW LOGGIA CONTINUOUS
ROOM 1 15 DETAILED ON SH 6
SACRISTY
SANCTUARY
TILE FLOOR WOOD RAIL
2 STEPS SEE SEC
RUINED LOGGIA
NEW PULPIT
CHOLY WATER
CHAPEL
COBBLE FLOOR
RAMPUP
NEW RAMP & CHOIR
CHOIR OVER
VESTIBULE
RM 4 15 DETAILED ON SHEET 5
WINE VATS & VAULT
SEE DETAIL SHEET 14
REMAINS OF RUINED MONASTERY WING
BREAK IN VAULT SEE SHEET 5
RUINED ARCADE
E.O. BLODGETT, DEL
DIMENSIONS TO BASES
DIMENSIONS TO PIERS
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS, BUILDINGS AND RESERVATIONS
BRANCH OF PLANS AND DESIGN
NAME OF STRUCTURE
MISSION SAN ANTONIO DE PADUA-NEAR JOLON-MONTEREY COUNTY-CALIFORNIA
SURVEY NO. 38-3
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 2 OF 17 SHEETS
INDEX NO

SOUTH FACADE OF CHURCH, MISSION SAN ANTONIO DE PADUA. ALTHOUGH RARELY VISITED TODAY BECAUSE REMOVED FROM THE HIGHWAY OVER INDIFFERENT ROADS, THIS BUILDING IS ONE OF THE MOST ORIGINAL AND CHARMING OF THE MISSION DESIGNS. THIS FACADE IS ENTIRELY OF BURNED BRICK. THE VESTIBULE BETWEEN IT AND THE CHURCH IS A PIECE OF VERY DARING BRICK VAULTING STILL LARGELY INTACT DESPITE EARTHQUAKES AND NEGLECT.

SOUTH FACADE MISSION SAN ANTONIO DE PADUA, MONTEREY COUNTY, CALIFORNIA.



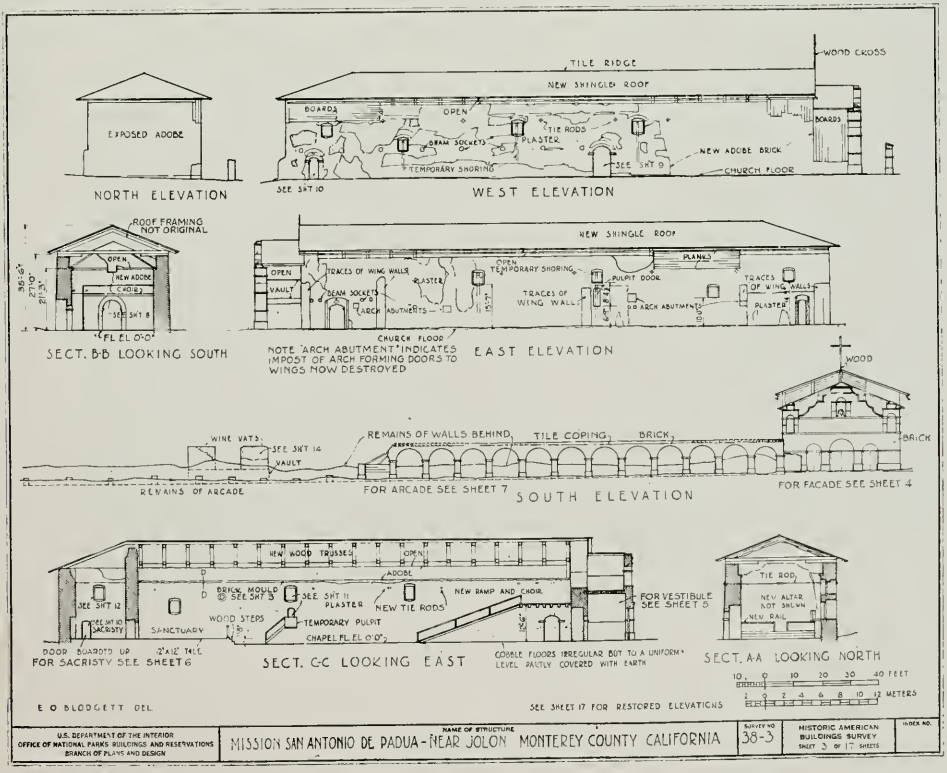
SOUTH FACADE OF CHURCH

E.O. BLODGETT, DEL.

U.S. DEPARTMENT OF THE INTERIOR OFFICE OF NATIONAL PARKS BUILDINGS AND RESERVATIONS BRANCH OF PLANS AND DESIGN	NAME OF STRUCTURE MISSION SAN ANTONIO DE PADUA - NEAR JOLON - MONTEREY COUNTY - CALIFORNIA	SURVEY NO. 38-3	HISTORIC AMERICAN BUILDINGS SURVEY SHEET 4 OF 17 SHEETS	INDEX NO

REAR OF CHURCH, MISSION SAN ANTONIO DE PADUA. THE PRESENT CONDITION OF THE MISSION IS DEPLORABLE. IT IS PROBABLE THAT LITTLE OF IT WOULD SURVIVE A MAJOR EARTHQUAKE. EXTENSIVE IRRIGATION WORKS AND ORIGINAL WATER MILL WERE PART OF THE ORIGINAL MISSION EQUIPMENT. DITCHES CARRYING THE WATER FOR LONG DISTANCES FROM THE MOUNTAINS ARE STILL TRACEABLE ON THE HILLSIDES.

ELEVATIONS AND SECTIONS, MISSION SAN ANTONIO DE PADUA, MONTEREY COUNTY, CALIFORNIA.



WOOD CROSS
TILE RIDGE
NEW SHINGLE ROOF
EXPOSED ADOBE
BOARDS
OPEN
TIE RODS
BEAM SOCKETS
PLASTER
NEW ADOBE BRICK
TEMPORARY SHORING
SEE SHT 9
CHURCH FLOOR
SEE SHT 10
NORTH ELEVATION
WEST ELEVATION
ROOF FRAMING NOT ORIGINAL
OPEN
NEW ADOBE
CHOIR
SEE SHT 8
FL EL 0'-0"
SECT. B-B LOOKING SOUTH
NEW SHINGLE ROOF
PLANKS
OPEN
VAULT
TRACES OF WING WALLS
BEAM SOCKETS
ARCH ABUTMENTS
PLASTER
OPEN TEMPORARY SHORING
PULPIT DOOR
TRACES OF WING WALLS
ARCH ABUTMENTS
TRACES OF WING WALLS
PLASTER
CHURCH FLOOR
NOTE "ARCH ABUTMENT" INDICATES IMPOST OF ARCH FORMING DOORS TO WINGS NOW DESTROYED
EAST ELEVATION
WOOD
WINE VATS
SEE SHT 14
VAULT
REMAINS OF WALLS BEHIND
TILE COPING
BRICK
BRICK
REMAINS OF ARCADE
FOR ARCADE SEE SHEET 7
SOUTH ELEVATION
FOR FACADE SEE SHEET 4
NEW WOOD TRUSSES
OPEN
ADOBE
BRICK MOULD @ SEE SHT 3
SEE SHT 11
PLASTER
NEW TIE RODS
NEW RAMP AND CHOIR
FOR VESTIBULE SEE SHEET 5
SEE SHT 12
SEE SHT 10 SACRISTY
SANCTUARY
WOOD STEPS
TEMPORARY PULPIT
CHAPEL FL EL 0'-0"
DOOR BOARDED UP
2"x12" TILE
FOR SACRISTY SEE SHEET 6
SECT. C-C LOOKING EAST
COBBLE FLOORS IRREGULAR BUT TO A UNIFORM LEVEL PARTLY COVERED WITH EARTH
TIE ROD
NEW ALTAR NOT SHOWN
NEW RAIL
SECT. A-A LOOKING NORTH
10 0 10 20 30 40 FEET
2 0 2 4 6 8 10 12 METERS
E O BLODGETT DEL
SEE SHEET 17 FOR RESTORED ELEVATIONS
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS BUILDINGS AND RESERVATIONS
BRANCH OF PLANS AND DESIGN
NAME OF STRUCTURE
MISSION SAN ANTONIO DE PADUA - NEAR JOLON MONTEREY COUNTY CALIFORNIA
SURVEY NO 38-3
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 3 OF 17 SHEETS
INDEX NO.

TOP O' TOWN HOUSE, BUILT ON ROOF OF O'CONNOR, MOFFATT BUILDING, SAN FRANCISCO

O. A. DEICHMANN, ARCHITECT

Top-O'Town

A Roof House

by Horace G. Cotton

THE recently completed model house, known as the "Top O'The Town House" and built on the roof of the O'Connor Moffatt Building in San Francisco, is an unusual type of home both in design and construction. O. A. Deichmann of San Francisco is the architect.

The architecture is modified Spanish. The window reveals are interior rather than exterior.

The general plan is built around the living room which is so located in reference to the older structure that it may be opened into the auditorium of the main building, this in anticipation of using it as a stage for fashion revues.

From this fixed point the balance of the plan was arranged to miss skylights, ventilator flues and other permanent structural obstacles. The modernistic idea of a one room house for reception, living room and dining room quarters has been most successfully carried out. The basic note is simplicity, domesticity and comfort. Also an important element is the principle of privacy wherein all living quarters are closely allied to the garden in the rear of the home and away from public contact. This feeling has been developed to almost a Moorish trend wherein the cloistered quarters of the family are practically isolated from every point except within the household.

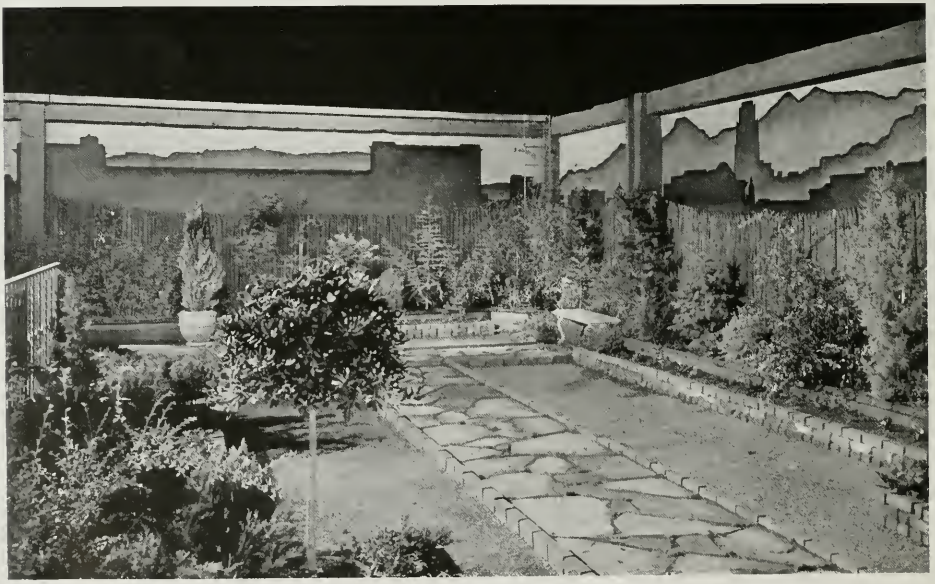
The interior design and color scheme were dictated by a desire to make the effect adaptable to any type of furnishing and to maintain a restful and domestic feeling.

Unusual items of construction are:

The exterior walls are free cast concrete, with wall units cast flat on the ground. The finishing is applied during the casting so no further finishing is required after erection. The aggregate used was Haydite with Tricosal for the purpose of saving weight. When erected the units were tied together with steel dowls and the joints filled after assembly.

This type of construction is new and was worked out by the architect in an effort to simplify and lower the cost of building construction. The results more than justify his efforts and the type is likely to find favor in certain classes of work. The architect stated that this departure from the old fashioned methods was not meant to eliminate other types of construction. It would be folly, for example, to build a wooden Colonial home with concrete wall

GARDEN VIEW, TOP O' THE TOWN HOUSE, SAN FRANCISCO
O. A. Deichmann, Architect



GARDEN, TOP O' THE TOWN HOUSE, SAN FRANCISCO
Murals by John Stoll

LIVING ROOM, TOP O' THE TOWN HOUSE, SAN FRANCISCO
O. A. Deichmann, Architect

BOYS' ROOM, TOP O' THE TOWN HOUSE, SAN FRANCISCO
O. A. Deichmann, Architect

units, or to use this material merely as an imitation of any style or type. It is primarily a simplified and inexpensive method of constructing concrete wall exteriors of a permanent material with a high standard of workmanship obtained at low cost.

An earthquake resistant feature is the laminated plank ceiling, which is also used as a direct base for a decorative color scheme.

The lighting system is controlled by a no-fuse panel board.

The air conditioning unit, installed by the Atlas Heating and Ventilating Co., Ltd., is completely automatic. The room temperature and humidity are controlled by a thermostat and humistat, located in the main hall. The air is filtered by dry filters and washed by the air washer. The fumes and cooking odors in the kitchen are removed by the ceiling fan.

A particularly difficult problem was the shut in effect of the solid concrete fire walls, some twelve feet high, which completely enclose the garden and living side of the house. Extended vistas, so pleasing when viewed from the living room or other vantage points, are completely shut off. Skill and forethought have done much to eliminate this "stuffy" feeling by the introduction of two elements which make the garden outstanding.

John Stoll, one of the best known mural painters in California, was employed to decorate the fire walls with pictorial murals of San Francisco Bay scenes. He carefully toned in his color work with the second outstanding element in the garden, a rustic redwood fence, supplied by the California Rustic Fence Co. of 646 Call Building, San Francisco. The creation of this fence has become a new California industry and is destined to be an important element in gardens where a naturalistic screen of soft redwood tones is desired to eliminate objectionable views, or as a beautiful background for garden flowers. In this particular case the function is two fold. The soft reddish tones of the redwood bark, softened by the silvery grey of moss and lichens, contrasts beautifully with the foliage and flowers in the foreground. But its more important function is to lend distance to Mr. Stoll's murals.

A NEO-CLASSIC MAHOGANY DOOR IN TOP O' THE TOWN HOUSE
Davis Hardwood Company, San Francisco

The public has received this effort of O'Connor Moffatt and Co., and those who so generously assisted the architect, with frank admiration. An average of five thousand guests daily are receiving suggestions in home design and increasing their interest in home development problems by a study of this interesting structure.

Top O'Town House, San Francisco

O. A. Deichmann, *Architect*
Walter A. Hoff, *Landscape Architect*

The following firms supplied materials and equipment:

Garden "Redwood" Fence:

CALIFORNIA RUSTIC FENCE CO.,
646 Call Bldg.,
San Francisco

Gardens:

WALTER A. HOFF LANDSCAPE ORGANIZATION,
580 Market Street,
San Francisco

Roof Tile:

N. CLARK & SONS,
116 Natoma St.,
San Francisco

Plumbing Fixtures:

CRANE CO.,
61 New Montgomery St.,
San Francisco

Glass and Glazing:

W. P. FULLER & CO.,
301 Mission Street,
San Francisco

Ornamental, Bathroom and Quarry Tile:

GLADDING McBEAN & CO.,
660 Market Street,
San Francisco

"Dutch Boy" Paint Materials:

NATIONAL LEAD CO.,
2240 - 24th Street,
San Francisco

Monel Kitchen Sinks:

PACIFIC METALS CO., LTD.,
3100 - 19th St.,
San Francisco

Hardwood Doors and Trim:

DAVIS HARDWOOD CO.,
350 Bay St.,
San Francisco

"Bodemix" and Concrete Materials:

BODE GRAVEL CO.,
235 Alabama St.,
San Francisco

Heating, Air Conditioning and Sheet Metal Work:

ATLAS HEATING & VENTILATING CO.
557 - 4th St.,
San Francisco

Reinforcing Steel:

W. S. WETENHALL CO.,
17th and Wisconsin Sts.,
San Francisco

Painting and Decorating:

FAGGIONI CO. STUDIOS,
160 South Park,
San Francisco

Venetian Blinds:

GUNN, CARLE & CO.
20 Potrero Ave.,
San Francisco

Cabinets and Built-in Fixtures:

LIBERTY MILL & CABINET CO.,
1335 Folsom St.,
San Francisco

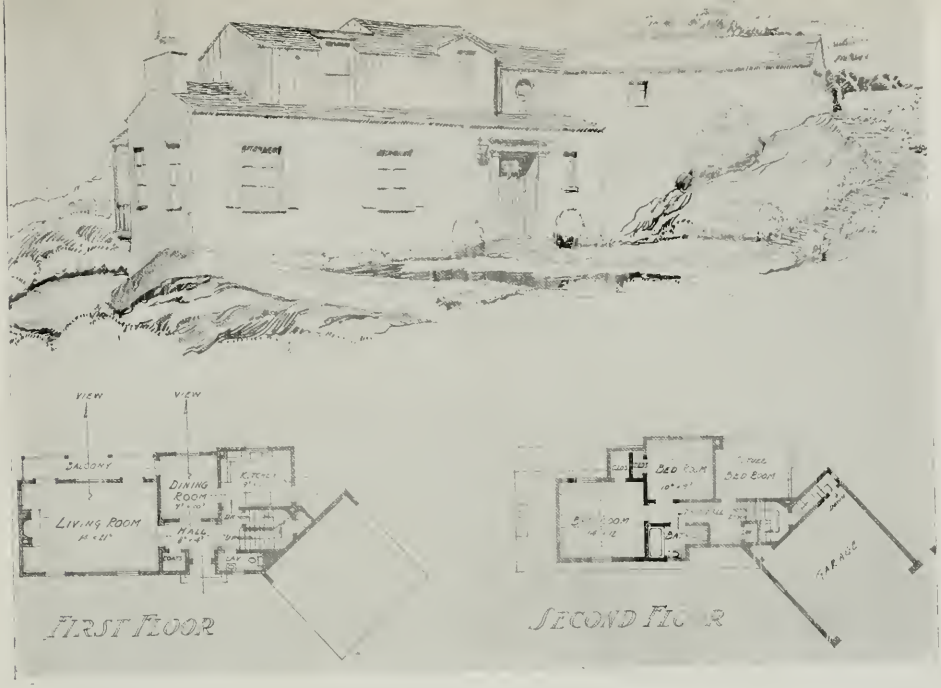
Masonite Floors:

LILLY & CROWLEY, INC.,
90 Townsend St.,
San Francisco

Special Cement Floor Treatments:

HORN PRODUCTS CO.,
557 Market St.,
San Francisco

VIA MUZIA
PERUGIA



AWARDED FIRST PRIZE IN SMALL HOUSE COMPETITION
Earl R. MacDonald, Architect

Competition

by Evalyn H. Merrill

DURING the month of August, the Home Planning Bureau, located at Breuner's, 2109 Broadway, Oakland, California, sponsored an architects' competition for a residence to be erected in Montclair Highlands Extension by the Syndicate Merriewood Company, Ltd.

The author of the prize-winning design is to supervise the building of the home, and will be commissioned for full architectural services.

Twenty - five small - home designs were submitted by nineteen Bay area architects. The jury of award was composed of Albert Farr, Mark Daniels and Irving F. Morrow, with Harris Allen acting as architectural advisor.

The plan submitted by Earl R. MacDonald was chosen by the jury as the best design—from the standpoints of arrangement, circulation and adaptation to the contour exposures and views. Mr. MacDonald's plan was one of the most economical schemes submitted.

The jury voted honorable mention to John Knox Ballantine, San Francisco; Miller & Warnecke, Oakland, and Roland I. Stringham, Berkeley.

Other Bay area architects who submitted designs included: Albert J. Loubet, Theodore C. Bernardi, Newsom & Newsom, Henry T. Howard, Ellsworth Johnson, Confer & Anderson, Mario Corbett, Theodore G. Ruegg, Michael Goodman, David H. Horn, Chester H. Treichel, Angelo Hewetson, James T. Narbett, Frederick H. Reimers and Edwin L. Snyder.

MODEL OF SAN FRANCISCO BAY BRIDGE, THE DOMINATING FEATURE OF THE COLUMBIA STEEL COMPANY'S EXHIBIT AT THE RECENT CALIFORNIA STATE FAIR

License

Needed to Advertise

A SUPERIOR Court decision, Appellate Department, has recently been made in San Francisco that is of vital importance to the architectural profession. Judge James G. Conlan has affirmed a judgment of the lower courts in the case of the State of California vs. Herman Steiger, who was tried and found guilty of violating the statute by displaying a sign indicating that the defendant was an architect or qualified to engage in the practice of architecture without first having obtained a certificate from the California State Board of Architectural Examiners. A. L. Bolton represented the state board at both hearings. In affirming the verdict of the lower court Judge Conlan called attention to the fact that the advertisement in question contained the words "Designer and Builder." "Sec. 5 of the Act provides in part as follows: 'to advertise or put out any sign' * * * which might indicate to the public that he is an architect or that he is qualified to engage in the practice of architecture.' It will be noticed that this statute uses the words 'might indicate,' meaning that if there is a reasonable possibility that the public could accept the sign as indicative of architectural qualification, a violation of the statute has occurred. The word 'Designer' coupled with the word 'Builder' indicates that the advertiser is a builder and designer of buildings. Used in that sense the word designer is somewhat synonymous with the word architect, and hence might reasonably be understood by the public as indicating that the advertiser is qualified to engage in the practice of architecture."

Continuing, the court found:

'Appellant contends that this advertisement could only mislead temporarily. It is clear, however, that the legislature intended from the language used that such advertisements should not mislead at all.

"Architecture is defined in the New Standard Dictionary as the science of designing and constructing buildings with reference to adaptation to their ends and to beauty of form and proportion. One who holds himself out to the public as a designer and builder is offering his services to design and make plans and drawings for the construction of buildings; and in the interest of public safety, he may properly be required to procure a certificate evidencing his qualifications for the employment which, by means of his sign or advertisement, he is soliciting.

"The advertisement does not come within the many exceptions set forth in Sec. 5. It is possible that an unlicensed person may "furnish plans, drawings, specifications, instruments of service or other data for labor and materials to be furnished by such person, either alone or with sub-contractors, for store fronts, interior alterations or additions, fixtures, cabinet work, furniture, or other appliances or equipment," etc.; but there is nothing in the advertisement that limits this advertiser to such work.

"Judgment affirmed."

In connection with the above decision the following extracts from the District Attorney s memorandum of points and authorities bearing on the case will be found of interest and value to the profession:

Appellant was charged and found guilty of violating the statute providing that

> "It shall be unlawful . . . To advertise or put out any sign or card or other device which might indicate to the public that he is an architect or that he is qualified to engage in the practice of architecture."

The cases cited by counsel are not in point. In some, the defendants were charged with "practicing architecture", which was not the offense of appellant.

The matter at bar may involve a question of first impression. We are therefore briefly presenting a few pertinent observations.

If appellant were accused of "practicing architecture" and it was established that he made plans or drawings or specifications, or other data, in connection with the construction of a building, then in such or either event, appellant, by way of defense, could adduce evidence and claim that

1. He made plans or drawings for his own building.
2. He furnished plans, drawings, specifications or other data to other persons for the construction of a building, but before doing so he acknowledged to such other person in writing that he was not an architect.
3. He was not an architect, but that a copartnership was composed of himself and/or others, including an architect, and that the name of such architect appeared on all instruments of service furnished by the copartnership.

The foregoing are the three "exceptions" mentioned in the statute.

No such excusatory issues are involved in this matter.

The "first" is quickly eliminated, for it is evident that the appellant did not display the sign "Designer and Builder" with respect to his own plans and drawings, for his own building.

The "second and third exceptions" are conditions imposed only when a transaction for services is initiated or consummated. A person may advertise and display a sign holding himself out to the public as a "Designer and Builder" (the completed offense herein), but until he obtains a client, and initiates or consummates a transaction, no occasion arises or exists for him to acknowledge in writing that he is not an architect (second exception) or to have instruments of service bear the signature of a person who is a certified architect (third exception).

We therefore must conclude, that the conditions mentioned in the "second and third exceptions" do not arise during the time that appellant advertises and displays a sign holding himself out to the public as a "Designer and Builder", the offense charged herein, and that the "first, second and third exceptions", by way of excusatory defense, can logically be invoked only when a person is charged with "practicing architecture", a separate and distinct offense.

Appellant is accused of advertising and displaying a sign holding himself out to the public as a "Designer and Builder".

Then and there he committed a complete offense, and he cannot, by way of defense, be heard to say,

"Yes, that is so, but I 'intended' when I obtained a client, to acknowledge in writing that I was not an architect," (second exception), or, "Yes, that is so, but I 'intended' when I obtained a client to have instruments of service bear the signature of a person who is a certificated architect," (third exception).

Obviously, what the appellant "probably or possibly intended to do" is irrelevant and immaterial. The trial court passed upon the evidence, not the "possible or probable intentions of the appellant."

If proof as to the "first, second and third exceptions" hereinbefore mentioned were relevant, which we do not concede, then it was incumbent upon the appellant, and it was his burden and duty, to raise such issues in the trial court and adduce evidence in support thereof, which he did not do.

Before the trial court, appellant failed to offer any excuse, or a defense of any kind, and he cannot, therefore, advance his novel contentions for the first time on appeal.

> People vs. Ju Buck Ning, 9 Cal. App. 735 at 736:
> "It is the duty of the appellant to show error by the record brought to this Court upon his appeal."
>
> People vs. Malone, 48 Cal. App. 398.

Contrary to the suggestion of counsel, whether architecture is of recent or ancient origin, was not the question that the legislature "had in mind" when the statute was enacted.

Its purpose and objective was far more important.

A reading of the statute discloses that the Legislature was not content merely to declare that

> It shall be unlawful for any person to advertise or put out any card or sign or other device, "that he is an architect".

The public welfare suggested the prohibition of conduct short of the above, by providing that

> It shall be unlawful for any person to advertise or put out any card or sign or other device, "which might indicate to the public" that he is an architect.

The Legislature was motivated to enact the law as above set forth, because obviously it is injurious to public interest to allow unskilled and unqualified persons to advertise in any manner, directly or indirectly, that their services can be engaged to prepare plans and specifications for the erection of buildings, for danger arises and disaster occurs where there are defects in plans or construction.

Counsel represents his client and speaks his mind, and thereby conclusively demonstrates the intent, attitude and position of appellant.

He says Herman Steiger is a "master builder". We conclude that when appellant advertised and displayed a sign holding himself out as a "Designer and Builder" he intended and calculated to say to the public, and give the impression, that he had not only the qualifications of an architect, but, in addition, superior ability. We quote in this connection, Defendant's authorities, page 4.

> "The great structural works and designs were created, not by architects, but by master builders, members of the builders guild. The architects of today cannot match those works, they can only copy. The defendant before this Court is a master builder, qualified as such by a rigorous apprenticeship coupled with intensive study. He is not specializing on a small branch of his profession."

From the above we conclude that the appellant claims the right to practice architecture, for it is contended that he is a "master builder", a member of the "Builders Guild" and that Architecture is only a "small branch" of the "Builders Guild". Of course the statutes of California do not recognize the "Builders Guild" as a profession.

In the composition of the designation, emphasis is placed on "Designer", and the term "Builder" follows.

[Please turn to Page 63]

Arsine Hazard

Arsenic Not a Termite Barrier

by Prof. Charles A. Kofoid

THE search for wood preservatives adequate to protect against the attacks of the wood-destroying fungi and wood-eating termites has led to the development of several proprietary substances containing arsenic in some compound or combination for use in the treatment of railway ties, poles, bridge timber, and piling. Recently arsenicals have come to be used in wallboards as a protection against termites, and the approval for their use as a termite and dry rot protective in lumber in dwellings has been sought.

In the recommendations of the Executive Committee of the Termite Investigations Committee published in Termites and Termite Control (Univ. Calif. Press, 1934) a definite recommendation was made "that arsenical preservatives be not used in the treatment of wood, wallboard, building paper, or other material used in dwellings or structures accessible to man, or in or on soil underneath such structures, as a treatment against termites. The arsenic compounds commonly used as preservatives are toxic to man and also present a toxic fume hazard in case of fire. Furthermore, termites and their burrows are universally infested by fungi, including many common molds. Fungi are also abundant in the soil in which termites live. A number of these fungi turn arsenical compounds into a volatile form, which diffuses through the air and slowly poisons persons breathing it. The entire number of species of fungi capable of making this transformation is as yet unknown."

At the time this recommendation was made the Committee had before it only the presumptive evidence that there was an arsine hazard in the use of arsenicals in and under dwellings, though even this evidence was such that the Committee felt justified in clearly pointing out the hazard to health and life potentially present in arsenic-treated building materials.

Since this recommendation was published research has brought to light scientific proof of the validity of the recommendation against the use of arsenicals in dwellings which strongly reinforces the advisability of using other preservatives than arsenicals in dwellings.

The additional data made available cover two important points. The first is the findings of Dr. Hendee (in press) showing that the termites are actually dependent on fungi for their normal growth, and the second is the production of arsine from arsenic-treated wood by fungi carried by termites. If termites are isolated and those of one lot fed fresh wood daily

in which little, if any growth of fungi is present, while those of the other lot are fed on wood continuously fungused, the latter grow normally and the total nitrogen gradually increases in their bodies, while the total nitrogen in those fed on fresh wood daily increases to only a trifling amount. The wood-fungus combination is thus a normal food for the wood-eating termite, and fungus-free wood does not meet its normal needs.

Termite burrows always contain fungi growing as microscopical filaments or hyphæ in their immediate walls, even in seemingly dry, sound wood. Fungi are recoverable by culture on suitable media from the frass made up of the massed pellets in the burrows of the subterranean and rotten-wood termites, and of the minute granular pellets of the dry-wood termites, from contents of the termites' digestive tract, and from the wood of their burrows, especially the rotten wood.

Termites, fungi, both wood-destroying and others not destructive of wood, and wood, especially rotting wood, are thus linked together in a biological mechanism built on wood as food of the fungi; and fungus-wood complex as the food of the termites. The fungi are therefore normal constituents of the termites surroundings.

The closed burrows of the termites make ideal culture chambers for the fungi. The residual moisture of the wood and that of respiration of the termites together afford the necessary humidity for the growth of fungus. Whether or not the fungi can convert the natural protective extractives of the wood into more palatable form for the termites is not known.

The fungi growing in association with termites are of many kinds and are not specific to any given kind of termites, at least among the wood-eating termites. They are intermingled in varying combinations in the different species of termites and among different colonies of the same species of termites. Thirty-three genera and 22 kinds of non-sporulating (and therefore unidentified) fungi were cultivated from 39 colonies of California termites. The average number of genera of fungi isolated from 10 cultures made from each of 12 colonies of each of the species of termites was 5.08 for *Kalotermes minor*, 7.25 for *Zootermopsis angusticollis*, and 8.75 for *Reticulitermes hesperus*.

The variety of fungus infestation in the rotten-wood and subterranean termite colonies which are associated with soil is greater than in those of the dry-wood termite, and dry rot is much rarer with the last-named termite, which has no dependence on soil.

Further investigation of more colonies of termites and with more varieties of culture media will tend to increase the number of kinds of fungi recoverable from termite-infested wood.

Many of the fungi found in association with termites occur also in the soil and some of them occur in the household on bread, food materials, paste, leather, and damp paper, as well as in wood. Their protected spores are resistant to desiccation and are widespread in nature, are carried in dust, and transform into the vegetative hyphal stages which invade suitable food substrates. The termites are by no means necessary for their distribution. The arsine hazard exists with arsenic-treated building materials quite independently of termites. These insects enter the picture effectively, however, because they always carry fungi about with them and because they bring these fungi into direct contact with the wood under conditions favorable for their growth.

The arsine hazard can be fully understood only when it is realized that there are arsenic-fungi, namely, fungi which are not killed by concentrations of arsenical

salts which adequately protect wood from the attacks of most other fungi. Instead of being a protection against these arsenic fungi, the arsenic is actually used in the metabolism of the fungus, which therefore thrives in the treated wood, releasing volatile forms of arsenic known generally to have a penetrating odor somewhat resembling that of garlic. These gases are highly poisonous and the arsenic they incorporate is absorbed quickly in breathing and very slowly eliminated, so that continuous or intermittent breathing of less than lethal concentrations tends gradually to build up the amount in the body of the person exposed to the gas to the toxic and ultimately the lethal amount. In one medical case of such poisoning the victims reported no detectable odor, possibly because of the low concentration of the gas in that instance.

The arsine when breathed enters the blood, destroys the red blood cells in numbers in some ratio to the amount and concentration of the gas. The detritus of the broken-down cells overburdens the liver, inducing jaundice, and the urine is also darkened. The symptoms are general malaise, dizziness, nausea, pain, and haematuria. The symptoms are reported to appear several hours after exposure, or, in brief exposures or small concentrations to be delayed several days.

The lethal dose of arsine (diethylarsine) is very small. It is stated by different authors to be from 30 to 150 milligrams, and the toxic symptoms appear from doses of 1 100 of a milligram to 10 milligrams.

The amounts of arsenic-containing chemicals reported in the test blocks in the International Testing Grounds at Barro Colorado Island, Canal Zone, range from 0.47 to 1.30 pounds per cubic foot. Assuming this to be arsenious oxide and converting it to arsine, the minimum poundage in a square foot of building material ½ inch thick, such as wallboard, could yield 40 maximum lethal doses of arsine, or 200 minimum ones.

It should be noted that the hazard under discussion is not that of ordinary poisoning by mouth, but the much more dangerous one of a lethal gas, the taking of which requires no conscious effort on the part of the victim, who may be wholly unaware alike of the danger and of the fact that he is inhaling a dangerous substance.

The hazard is increased by moisture, as in basements, laundries, kitchens, and by automatic conditioning of moisture in the air. The continuity of the process and accumulation of the toxic substance in the human system is aided by the diffusion of the gas through the house. The offering of various graded concentrations of the arsenical, if soluble, is provided by the absorption of moisture into walls, as in the London poisoning case in which the arsenic left the wall paper in which it was originally located and was found in the wall beneath the paper, from which the gas was given off and the arsenic later recovered on analysis from the bodies of the victims.

In order to determine whether or not arsenic-fungi are associated with termites laboratory tests were made with three blocks each of sugar pine, Douglas fir, and redwood boiled for twenty-four hours in a saturated aqueous solution of a commercial proprietary wood preservative containing arsenic. These blocks were then covered on one side with a high grade filter paper applied with pure flour paste, sterilized in an autoclave, and twenty termites were placed on each block in a sterile dish for 24 hours and then removed. The dishes were kept covered in a warm, dark room. Several kinds of fungi soon appeared on each block and spread over the surface of the paper and wood. At the end of twenty-

seven days the garlic odor was detected from two of the nine blocks, one of sugar pine seeded from the dry-wood termite, and the other of fir seeded from the damp-wood termite. After standing for four months, in which time the growths had decreased, the air in the covered dishes was tested with strips of filter paper wet with acidulated mercuric chloride. Two of the blocks, both redwood, one seeded from the subterranean termite and the other from the dry-wood termite, gave the characteristic color reaction for arsine. Thus four of the nine blocks gave evidence of arsine-producing fungi, and all three of the destructive wood-eating termites, *Kalotermes minor* (from Alhambra, California), and *Reticulitermes hesperus* and *Zootermopsis angusticollis* (from Berkeley, California), all freshly collected, are implicated as distributors of arsine-producing fungi in California. Further studies are being made to determine the particular species of fungi involved.

It should be made clear that the preservative treatment with arsenicals may kill every termite nibbling the treated wood and still such termites will be able to leave spores of fungi which, if they are arsenic-fungi, will seed the treated wood and flourish therein, although the termites which brought them to the wood are promptly killed by their meal on the wood.

In the light of these facts it seems highly desirable in the interests of public health that the arsine hazard be not created in dwellings by the use of arsenicals in wallboard and lumber as preservatives against termites and fungi. The wood-preserving industry may well turn from arsenicals to other chemicals for preserving materials used in dwellings from these destructive organisms.

It is obvious that engineers, architects, contractors, and others responsible for the use of arsenic-treated materials in buildings used for human occupancy, should be made aware of this hazard and that the owner and occupant should be warned of the risk. Some building materials on the market reported to use arsenical treatments are not labeled or marked as poison. Architects specifying chemically treated wood for use in dwellings should ascertain whether or not an arsenical is used in the treatment.

Owing to the diversity of the already known arsine fungi, our lack of knowledge of all of the conditions under which arsine may be produced, and the uncertainty as to whether or not a given compound of arsenic is exempt from transformation into arsine under attack by different arsenic-fungi under varying conditions of service, it seems the part of wisdom and caution not to expose the occupants of homes to the arsine hazard. It may be true, as recently stated at a public hearing, that there is not an iota of evidence that arsenic in wallboard ever (yet) harmed a living thing. The writer is responsible for the insertion of the word "yet." Must we wait for cases of human poisoning?

Engineering
and
Building Construction

GLOBE BREWERY, BALTIMORE, MD.

FEATURING
BRICK VAULTS NEARLY
200 YEARS OLD

THESE WELL PRESERVED VAULTS IN THE GLOBE BREWERY, BALTIMORE, WERE BUILT IN 1744 OF BRICK BROUGHT HERE FROM ENGLAND. ENGINEERS TODAY HAVE PRONOUNCED THEM MODELS OF CONSTRUCTION

ALTHOUGH NEARLY 200 YEARS OLD, THESE VAULTS IN GLOBE BREWERY, BALTIMORE, ARE STILL IN SPLENDID CONDITION

Since 1744

Brick Vaults Nearly Two Centuries Old

AN interesting discovery in building construction was made recently in Baltimore. Three large vaults in the basement of the Globe Brewery were found to be in splendid condition although nearly 100 years old. The vaults are 120 feet long, 75 feet wide and about nine feet high. Proof has been obtained showing that they were built in 1744 by Messrs Leonard and Daniel Barnetz, of York, Pennsylvania.

Captain Leonard, who constructed the brewery, was also a vessel owner and so he brought over the brick from England out of which the vaults were built. It has been said that this was, at the time, by far the largest brewery in America. The vaults are models of construction and have excited the admiration of present day architects and engineers by their beauty of arching and remarkable strength. The original brewery built over these vaults was only one story high. Since then there has been constructed over them a massive modern malthouse, 132 feet high. It extends beyond the area of the original brewery and has put upon the vaults a strain never contemplated by the builders.

ANOTHER VIEW OF BRICK VAULTS IN BASEMENT OF GLOBE BREWERY, BALTIMORE

The vaults are open to inspection of visitors. Architects and architectural students and others interested in this line of endeavor may gather much information by a visit to the plant.

STRUCTURAL PROBLEMS OF S. F. COUNTY JAIL

[Concluded from Page 28]

of the structure and a portion of the center the material slope is steep with the disintegrated and broken rock practically at the surface. While beneath the east and south wings the soil is somewhat more decomposed into smaller angular pieces of the original rock or its component materials. It contains 18 per cent to 28 per cent of silt and clay and has a moisture content of about 20 per cent. Consolidation tests are usually made for clays, but an attempt was made to make a comparable consolidation test for this material after, contrary to specifications, water was permitted to accumulate on the excavated areas. Therefore it was considered desirable to know the behavior of this material under remolded conditions.

Uniform Settlement

The excavation for the footings in the north and center wings was carried 18 inches below the footings and backfilled with excavated disintegrated materials compacted to a specified degree for the purpose of having all portions of the building settle uniformly as the increment of load was put on during the construction of the building.

The concrete was specified to have a minimum strength of 2500 pounds per square inch at the age of 28 days and steel to be of structural steel quality. The normal stresses used were in accordance with the San Francisco Building Code.

Foundations

Why Buildings Settle and Crack

WORLD activity in the study of foundations is reported by the Engineering Foundation, research organization of the principal national engineering societies. Developing a science long neglected, engineers are conducting intensive investigations into the supporting power of earths and foundations. Why buildings settle and crack is a chief problem.

The design of the steel, of the floors, and of the walls of a building deals with materials of known strength and characteristics, and is more or less standardized, it was explained. Foundation planning, however, is primarily a matter of judgment, engineers working with the materials of nature of which fuller knowledge is essential to determine the allowable loadings on soils of various types and to insure safety.

"No structure can outlive its foundation," says Lazarus White of New York, chairman of the American committee sponsored by the Engineering Foundation and the American Society of Civil Engineers. "The buildings which have survived through the ages have done so because of their foundations. Yet until comparatively recent times foundations received but little attention as a science. The advent of the skyscraper was the result of rapid advance in the design and production of structural steel, electricity, and elevators, but the limitation was the foundation.

"Under the impetus of attempting to keep up with the rapid progress in allied sciences, attention was focused on the science of foundations. At first the new science could not keep pace with the demands of the skyscraper, and the foundations for many of the first tall structures were designed by applying to ordinary methods of design extremely high factors of safety, rather than by the application of knowledge of basic principles.

"When the enormous loadings could no longer be supported on the limited areas of city building plots, it became imperative that the engineer should have greater knowledge of the science of foundations.

Strength of a Foundation

"An eminent foundation engineer has stated that we never know how strong a foundation really is. If it supports the load for which it was designed, it is certainly adequate, but how much more than adequate cannot be determined. If, however, the foundation fails we know that it was inadequate, but it is then too late. The foundation engineer learns mainly from failures rather than from successful designs.

"A building on an inadequate foundation will settle. On some materials the settle-

ment will occur for only a limited time. The material beneath it will compact, and the settlement cease. If, however, the soil is of such poor character that the settlement continues, means must be taken to arrest this settlement.

"Such work is known as underpinning and is an art rather than a science. It is evident that working on the foundations of an existing structure and removing soil from beneath a footing supporting a column load of hundreds of tons, involves work of the utmost skill, care, and knowledge of the characteristics of the materials of nature."

Foundation failures, Mr. White points out, arise from many causes, including overloading the soil, failing to place a structure concentrically with its support, subsurface drainage which may lead to consolidation and subsequent settlement of the soil, or, for the buildings supported on wooden piles, the rotting out of the piles themselves.

Failures also result from loss of ground due to excavation on adjoining plots or the construction of a subway in front of the building, decomposition of strata originally firm, slipping of strata beneath the foundations; breaking through the stratum on which the foundation is placed into a softer underlying stratum, and earth tremors.

"In New York City a great variety of materials are encountered overlying the rock bed on which practically all our heavy buildings are founded," according to Mr. White. "Silt, peat, sand, gravel, boulders, and hard-pan are found in layers of varying thicknesses. Water may or may not be present. Rock may exist at the surface, in which case there is no problem, or may be as much as 200 feet below the street.

Problem for the Engineer

"Structures of a type wherein a small settlement will prove of but little consequence may be placed on a site where rock is at so great a depth that the construction of a foundation bearing on the rock would be economically prohibitive. Such a site would preclude the construction of a skyscraper or of a building of a monumental type such as a modern bank building, in which a slight settlement would crack and mar an imposing marble front.

"The problem of the engineer is to predetermine this settlement; to guard against the unequal settlements, and to select that type of foundation best suited, from both an economical and engineering standpoint, to the problem in hand.

"For foundations that are not carried to rock but bear upon some other material of lesser carrying capacity the engineer must make certain assumptions. For example, if the soil is capable of supporting two tons per square foot, a concrete footing ten feet square will support a 200-ton column load.

"In designing his ten-foot square column, the engineer assumed that the pressure on the soil under each square foot of the footing will be two tons. Actually, this is not the case; recent investigations have disclosed that the pressure on the soil beneath such a footing is of varying intensity, being greatest at the center and least at the edges.

"It has also been shown that the driving of piles into certain materials such as clay may not only add nothing to the existing soil as a foundation support, but may actually decrease its supporting power by a marked change in the physical characteristics of the material.

"For many years special committees of civil engineers have been furthering the advance of the science of foundations, correlating the results of investigations throughout the world, conducting investigations of their own, and recommending the allowable loadings on soils of various types and the factors of safety to be introduced into the design of foundations."

« « « « With the Architects » » » »

STATE BOARD MEETS

A joint meeting of the Northern and Southern Districts of the California State Board of Architectural Examiners was held in San Francisco, October 10-11. Southern board members are Louis J. Gill, San Diego, president; A. M. Edelman, Los Angeles, secretary; Harold E. Burket, Ventura; Harold C. Chambers, Los Angeles, and G. Stanley Wilson, Riverside. The purpose of the meeting was for the transaction of regular business and revision of the "Rules and Regulations" of the board, governing its procedure.

ALAMEDA COUNTY COURT HOUSE

Plans have been completed for the Alameda county court house and await final approval by the PWA engineers. It is expected bids will be called for early in November. The architects of the $3,000,000 structure are W. G. Corlett, H. A. Minton, Carl Werner, W. E. Schirmer and James W. Plachek.

TRINITY COUNTY COURT HOUSE

Plans have been completed by Jens C. Petersen, 812 26th Street, Sacramento, for a three-story reinforced concrete addition to the Trinity County Court House at Weaverville. The low bidder on the work is J. C. Meyers, of Stockton, for $34,308. Construction will go forward as soon as Federal approval has been obtained.

CONCRETE MAUSOLEUM

A reinforced concrete mausoleum will be built at Woodlawn cemetery, San Mateo County, by the Masonic Cemetery Association, from plans by William T. Merchant, Russ Building, San Francisco.

HEALDSBURG SCHOOL BUILDING

John I. Easterly is completing working drawings for a one-story frame and stucco grammar school building at Healdsburg, Sonoma County, to cost $65,000. Bonds have been voted by the district.

ARCHITECTS RECOGNIZED

Architects are being recognized in the Federal Government activities. Lewis P. Hobart, San Francisco, has been named chairman of the finance committee of the Better Housing movement in San Francisco by Charles M. Cadman, general chairman of the campaign.

In Oakland Charles F. B. Roeth has been appointed acting director of the SERA for Alameda County.

BERKELEY CHURCH

Theodore G. Ruegg, architect, 1515 Tyler Street, Berkeley, has prepared plans for a frame and stucco church for the Church of Jesus Christ of Latter Day Saints. The location of the new edifice is Vine & Walnut Streets, Berkeley, and the estimated cost is $45,000. Besides an auditorium, there will be a social hall, classrooms and small chapel.

PRINTING PLANT

One of the largest private building projects to go forward in San Francisco this year was recorded this month when a contract was let for the construction of a reinforced concrete printing plant at 12th Street and Van Ness Avenue, San Francisco, for the Recorder Printing & Publishing Company. More than $150,000 will be expended on the improvements. Will P. Day is the architect.

SAN JOSE AUDITORIUM

Charles A. Thomas, 127 Clayton Avenue, San Jose, submitted the low bid for the construction of the San Jose Civic Auditorium, from plans by Binder & Curtis. The amount of the Thomas's bid was $314,000.

WAR MEMORIAL COURT

At Stanford University, a new building project under consideration is a theater and war memorial court for which preliminary plans have been prepared by Arthur Brown, Jr. & Bakewell & Weihe.

BRICK HOUSE COMPETITION

All certified architects of California may take part in an architectural competition for the best design for a one-story house having not to exceed 1400 sq. ft. of floor area and a garage with exterior walls of reinforced groutlock masonry according to an announcement by the Simons Brick Company of Los Angeles. The competition has been approved by the Southern California Chapter, American Institute of Architects. Copies of the program are now available and may be obtained from the sponsor. All drawings must be delivered to Simons Brick Company on or before 5 p.m., November 1, 1934. The competition will be known as "The 100-Year House Competition."

Three cash prizes to contestants are offered, $125 for the design given first place, $75 for second place and $35 for third place. There will also be three honorable mentions which will draw $20 each. Simons Brick Company will also donate its material to the owner of the first of the three prize houses to be actually constructed providing the architect who submitted the plan is retained to prepare plans and specifications and supervise construction.

The following architects will comprise the jury: R. E. Coate, E. W. Maybury and W. L. Risley. The professional advisor is Harold C. Chambers.

UNION PASSENGER STATION

Los Angeles Union Terminal, the company organized by the Santa Fe, Southern Pacific and Union Pacific railways for the purpose of building the new passenger station on the Plaza site in Los Angeles, has notified the State Railroad Commission that work on the project would get under way soon after the government decides on the location of the new post office building, probably on or shortly after January 1, 1935. Preliminary plans are practically complete for the station, grade separations and two bridges which are to cross the Los Angeles river at Alhambra Avenue. The fill on the terminal site has been completed and grade lines for tracks established.

A. J. Barclay, construction superintendent for the terminal company, will direct all construction work. John Parkinson and Donald B. Parkinson, 808 Title Insurance Building, are the architects for the station.

LOS ANGELES HOUSING PROJECTS

A group of Los Angeles architects, composed of George Adams, Walter Davis, John Kibbey, Ross Montgomery, Wm. Mullay and Lloyd Wright, has prepared preliminary plans for the proposed housing project to be built in the First and Utah Streets district, Los Angeles, by the Municipal Housing Commission; Don Tyler, secretary, 417 S. Hill Street. The improvements would consist of a series of two-story, fireproof, multiple dwellings, containing a total of 1529 apartment units and costing between $4,000,000 and $5,000,000. The scheme will be submitted to the Federal government with a request for funds with which to finance the improvements. Ross Montgomery is the co-ordinating architect.

TEACHERS' COLLEGE BUILDINGS

San Diego State Teachers' College has prepared a list of improvements needed at the college, the list to be submitted to the state department of finance and the department of public works with a request that the budget for the next biennium provide the necessary funds. The following improvements are proposed: Science hall and additional classrooms, $82,500; swimming pool, $27,500; library addition, $33,000; shop building and corporation yard, $44,000; sidewalks, $10,000; grading, drains and oil surfacing for auto parking area, $6250, and miscellaneous improvements, $6000.

FRESNO AUDITORIUM

Plans are practically completed for a municipal auditorium at Fresno, estimated to cost $400,000. The Allied Architects', Inc., are in charge of the drawings. The architects are W. D. Coates, Jr., C. A. Franklin, H. Rafael Lake, Ernest J. Kump, Fred Swartz and E. W. Petersen.

ENGLISH STYLE DWELLING

John Dinwiddie, architect, 2815 Oak Knoll Terrace, Berkeley, has completed plans for a two-story English style dwelling to be built in the Uplands, Berkeley, by J. M. Walker. Edwin L. Snyder, architect, has also prepared plans for a house for Mr. Walker.

CHINESE BOYS' SCHOOL

A contract has been awarded for the construction of a two-story reinforced concrete Chinese home for boys in El Cerrito, Contra Costa County. Plans were prepared by Frederick H. Reimers, 233 Post Street, San Francisco.

FREDERICK ALBERT HALE

Frederick Albert Hale, pioneer architect of Salt Lake City, died September 6, aged 79. He was a native of Rochester, N.Y., and a graduate of Cornell University. Mr. Hale had practiced architecture in Denver and Salt Lake City since 1870. He designed the Commercial Bank Building in the latter city, besides the Beason, Summit and Eagle Buildings and the Keith and Ivers residences. He also did some work in California. A daughter, the wife of T. B. Hunter of Hunter & Hudson, of San Francsico, and a son, Girard V. B. Hale, distinguished artist of Santa Barbara, are the surviving relatives.

PERSONALS

William F. Thomas, formerly of Thomas and Totty, has opened an architectural office at 866 Dexter Horton Building, Seattle. During the past summer he was active designing small houses for the Sandy Hook Development near Suquamish, Kitsap County.

C. A. Meussdorffer, architect of San Francisco, has moved to 101 Post Street.

Stephen Richardson, former draftsman in the office of F. A. Naramore, Seattle, and recently senior student in architecture at the University of Washington, left September 5, for Boston, where he will study architecture at the Massachusetts Institute of Technology, which recently awarded him a national scholarship covering a year's tuition.

George Gove of Heath, Gove and Bell, Tacoma, spent the early days of September in San Francisco, studying prison design methods at Alcatraz Island. Mr. Gove also attended the national Marian Congress held at Portland in mid-August.

Arthur Dysart, architect of Seattle, who has been employed in the office of the U. S. Reclamation Service at Denver, has been transferred to the Grand Coulee Dam project.

John Graham, architect of Seattle, has returned from several months sojourn in Shanghai, China.

John T. Cronin, Washington native son and now a practicing architect in New York City, spent early September visiting Seattle relatives. Mr. Cronin in his early schooling attended Gonzaga University, later going to the Massachusetts Institute of Technology at Boston, where he obtained a degree in architecture. He was associate of Cass Gilbert for some years before the latter's death.

SANTA MARIA VETERANS MEMORIAL

Rudolph A. Polley, architect, 623 East Cypress Street, Santa Maria, has plans under way for a Veterans Memorial Building for Santa Barbara County. The structure is intended to be the new home of the Santa Maria Post, World War Veterans. An auditorium is to be the essential feature of the building. The first unit, consisting of lounge, lodge and card rooms, etc., is now under construction. Mr. Polley will be pleased to receive manufacturers catalogs and trade literature for his files.

BILLINGS ARCHITECTS BUSY

McIver and Cohagen of Billings and Great Falls, Montana, are reputed to be conducting the largest architectural office between Seattle and Minneapolis. Projects on their boards include a $250,000 building for the Eastern Montana Normal School, a new courthouse at Shelby, a school at Miles City, and several other public and commercial buildings.

A CORRECTION

The plans for the modernization of the Park Building, illustrated in the September Architect and Engineer, were prepared by W. C. Hays and Will G. Corlett, architects. By an error the name of Edward T. Foulkes was given as the architect of the alteration work. Both Mr. Hays and Mr. Corlett are well and favorably known to the profession.

CERTIFICATES TO PRACTICE

Provisional certificates to practice architecture have been granted the following by the California State Board of Architectural Examiners for the Northern District:

Robert C. Younger, 301-23rd Street, Sacramento; Wayne S. Hertzka, 1450 Chestnut Street, San Francisco; Scofield De Long, 1331 Garfield Ave., Berkeley.

1935 OFFICERS NOMINATED

San Francisco Section of the American Society of Civil Engineers, on recommendation of its nominating committee composed of F. C. Herrmann, E. J. Schneider, I. C. Steele and H. C. Vensano, will vote on the following for its officers for 1935:

President, Charles Gilman Hyde; Vice President, H. J. Brunnier; Secretary, T. J. Corwin, Jr.

BERKELEY SCHOOL PROGRAM

The Berkeley Board of Education has asked its citizens to vote November 6th on a bond issue of $2,842,000 for new school buildings and rehabilitation of existing structures. The board has approved what is known as the Berkeley type of school building which architects will be asked to adopt. This type consists of reinforced concrete basement with two stories of timber frame construction, designed to resist fire and earthquake. Wire lath will be used both outside and inside the buildings. If the bond issue carries, the following work will be done:

Columbus School, 7th Street (complete elementary school unit, including classrooms, cafeteria and auditorium).

Whittier School, Milvia Street, (complete elementary school unit, administrative and classrooms, cafeteria and auditorium).

Le Conte school, Ellsworth and Russell Streets, (complete elementary school unit, administrative and classrooms, cafeteria and auditorium).

Willard Junior High School, Telegraph Avenue, (rehabilitated and additions).

Burbank Junior High School, University Avenue (rehabilitated and additions).

Garfield Junior High School, Rose Street (rehabilitated and additions).

Jefferson School, Rose and Sacramento Streets, (complete rehabilitation and additions).

Thousand Oaks School, Tacoma and Colusa Streets, (complete rehabilitation and additions).

Longfellow School, California and Derby Streets, (complete rehabilitation and additions).

Cragmont School, Regal Road and Marin Avenue, (complete rehabilitation and additions).

Berkeley High School, Grove Street, (rehabilitation and new construction work).

The following schools will be rehabilitated without additions: John Muir elementary—Claremont and Ashby Avenues; Hillside — Leroy and Buena Vista Streets; Washington—Grove Street; Franklin — San Pablo Avenue; Emerson — Piedmont Avenue; Lincoln — Alice & Prince Streets; Edison, Jr.—Russell Street.

All of the auditoriums are to be of reinforced concrete. Selection of architects will not be made until after the bond election.

Formal requests for Government aid in sums of $864,984 and $240,960 are now on file in Washington, D.C.

If the grants are made and the bonds are voted, board members declare that the full quota of bonds will not be sold as Government money will be used instead.

HEATING PROBLEM SOLVED

AN interesting heating problem at the recently opened Continental Health Club at 560 Sutter Street, San Francisco, has been efficiently solved by the application of immersion gas firing.

It was desired to provide a means of securing a dry heat of approximately 140 degrees in a scientifically constructed dry heat room, 8x12 feet, with a 10½ foot ceiling. According to the management of the Continental Health Club, the trend in physical culture institutions generally is away from hot steam because of its bad nasal and sinus effects. A dry heat, simulating a natural desert atmosphere, is now the desired method of treatment.

In devising a way to secure this atmosphere, it was evident from the first that it would be impossible to use an appliance with an open flame in the hot room itself, as such a flame would quickly dissipate the oxygen in the atmosphere, resulting in unhealthy conditions.

A most satisfactory solution of this problem was finally effected by the installation of a Hones immersion gas burner. The gas burner has been installed so that it fires from the outside, through the wall into the hot room. The hot air travels through 12 feet of 3-inch pipe, and back to the wall through which it is vented up through the roof. The burner pipe is insulated where it passes through the wall; the room and windows are also insulated to prevent losses by radiation.

With this method of firing, a temperature of 140 degrees can be reached in the hot room in a period of 40 minutes, with a possible maximum of 170 degrees if desired. The gas consumption is approximately 40 cu. ft. per hour. The system is probably as efficient and economical in operation as any that could be designed for this particular requirement.

A recording thermometer registers the temperature in the hot room, so that a constant check can be kept on it from outside. It is now being planned to install a thermostatic control, so that the heating system will be entirely automatic in operation.

This is one of the many newly found uses for immersion gas firing in heating problems which have heretofore been difficult of solution. Firing by this method eliminates the necessity for expensive boiler installations, applying directed heat exclusively where it is needed.

ENGLISH STYLE DWELLING

At Atherton, San Mateo County, an English style home is to be built for J. M. Mannon, from plans by Earl J. Osborne, architect, 251 Kearny Street, San Francisco. Improvements will cost approximately $10,000.

Chapter and Club Meetings

STATE CONVENTION

The annual meeting of the State Association of California Architects was held at Fairmont Hotel, San Francisco, Thursday, Friday and Saturday, October 11, 12 and 13, with an unexpectedly large turnout. A feature of the first day was the joint forum under the auspices of the State Association and the Producers' Council Club, and participated in by architects, engineers, contractors, labor representatives, manufacturers, realtors, bankers, Federal and municipal officers and community organizations. Other forums were conducted with the following topics: "Demolition and Rehousing", "New Homes", "Modernization", "Building Costs" and "Credit and Finance".

Two sessions were held Friday with President Chester H. Miller presiding. At the morning session reports of officers and standing committees were received and in the afternoon there was an open session with C. C. Anglin, district director of the National Housing Administration as principal speaker. Officers elected appear on another page in this issue.

Saturday morning was devoted to an executive session of the State Association with Vice-president Harold C. Chambers presiding. In the afternoon the Bay Bridge project was the point of interest.

NORTHERN CALIFORNIA CHAPTER

A joint meeting of Northern California Chapter, A.I.A., and the State Association of California Architects, Northern Section, was held at Marquard's, San Francisco, at 6:30 P.M., September 25, with a large attendance. It was the first meeting since the summer recess.

The business session of the Chapter was conducted by its president, Albert J. Evers, and the transactions therein are recorded as follows:

Irving F. Morrow, chairman of the education committee, outlined the Institute's new policy on education and the part in it which has been requested of the Chapters.

Thomas J. Kent, chairman of the membership committee, reported progress in the renewal of Associateships which have expired under the five year limit.

Acting upon the suggestion of Arthur Brown, Jr., that the Chapter take steps toward securing the preservation of the old Mint Building in San Francisco, the following resolution was introduced by George R. Klinkhardt, chairman of the historic landmarks committee, and his motion for adoption was duly seconded;

"Whereas, The Government of the United States has acquired land and intends building a new Mint in the City of San Francisco; and

"Whereas, This action will lead to the abandonment of the present Mint at Fifth and Mission Streets, San Francisco; and

"Whereas, This old building is one of the few landmarks in our city worth preserving; now therefore

"Be It Resolved, That Northern California Chapter, the American Institute of Architects, and the State Association of California Architects, Northern Section, in joint session, hereby memorialize the Government of the United States to take the steps necessary to guard against the demolition of this monument."

With the amendment presented by Mr. Donovan that the San Francisco Chamber of Commerce and the California State Chamber of Commerce be requested to take similar action, the resolution was unanimously carried.

The Committee for the Housing Drive reported through Roland I. Stringham that a scheme is now being worked out in conjunction with the San Francisco Society of Architects and the Housing Administration for the remodeling of several old houses to publicly demonstrate the possibilities in renovizing.

Mr. Evers reported on the activities of the board of directors since the previous meeting. Close co-operation with various public agencies in the housing program was indicated.

The nominating committee presented its list of candidates for office in the ensuing year, as follows:

Albert J. Evers, President; Will G. Corlett, Vice-President; James H. Mitchell, Secretary-Treasurer; Warren C. Perry and William Wilson Wurster, Directors (three year term).

With the business session of the Chapter concluded, the meeting, thereafter, was conducted for the Association by its president, Chester H. Miller.

Plans for the convention in October were outlined and new advisers for the district societies announced.

Mr. Miller reported recommended architectural charges for renovizing work under and for the

duration of the National Housing Act, as developed jointly, by the Chapter's committee on practice and the professional betterment committee of the Association, and approved by the executive boards of the two organizations, as follows:

Initial Consultation and Architectural Diagnosis	$10.00
Subsequent Office Consultations up to 1 hour	3.00
Visits to Site	5.00
Draughting, per hour	2.50

The above would be a schedule of minimum charges for minor alterations and additions and pertains to partial and incidental services. When full services are needed or requested, the regular percentage schedule of the American Institute of Architects shall apply.

The motion of Mr. Maury to endorse the proposed schedule was seconded and unanimously carried.

In a discussion, introduced by Mr. Maury and relative to apparently exorbitant prices charged by certain trades, particularly, the electrical contractors, Messrs. Donovan, Bakewell and others voiced their belief that such practice, if true, will hold back construction work in large measure.

Mr. Maury moved that the price scale of the electrical contractors be referred to a joint committee of the Chapter and Association, in conjunction with the Associated General Contractors, for investigation.

Mr. Hays moved that the motion be amended to subject the price scale of all building trades to the committee for examination and diagnosis. The amendment and motion were unanimously carried.

The program of the evening was entered upon with the introduction of Charles M. Cadman, President of Pacific Coast Aggregates, Inc., and chairman of the Chamber of Commerce housing drive committee.

The speaker strongly emphasized that the direct benefit to the building industry from renovizing work will be reflected on business at large as he explained the program which, through the instrumentality of the National Housing Act, brings hope for recovery.—J.H.M.

TACOMA ARCHITECTS SOCIETY

The Tacoma Society of Architects took a leading part in the dedicatory exercises of the restoration of Fort Nisqually in Point Defiance Park, Tacoma.

Roland E. Borhek, past president of the Washington State Chapter, A.I.A., drew the plans for the restoration. Ralph Bishop, architectural draftsman, prepared valuable historical maps for enlightenment of the public regarding Pierce County pioneer life. Architect Borhek performed exhaustive research to gain proper information for reconstruction details.

Other society meetings of the past month were devoted to discussing politics and finance.

WASHINGTON STATE CHAPTER

The September meeting of Washington State Chapter, A.I.A., was devoted largely to a discussion of the new Federal Housing Act. J. Lister Holmes, chairman of the Institute committee handling the display and competition, gave a detailed explanation of the project which is planned to stimulate remodeling activity by providing a concrete showing of benefits.

Formal presentations of Fellowships granted by the National Institute were made to Carl F. Gould and David J. Myers. A. H. Albertson, the third Chapter member honored at the May annual meeting, was not present. A detailed report on the proceedings of the national convention was given by Lance E. Gowen. The meager fee allowed architects under Federal building programs was the subject of adverse criticism.

William J. Howard, representing the brick and tile association, presented the golf trophy to William Aitken, winner of the 1934 tourney. John C. Bess of Bess Brothers, makers of Keen cement, told about the uses of his product.

STRUCTURAL ENGINEERS

The third annual convention of the Structural Engineers Association of California was held at the Santa Maria Inn,Santa Maria, October 12, 13 and 14 with a large attendance from Northern and Southern California. Friday, the opening day, was given up to registration, an address by President R. V. Labarre, report of the secretary-treasurer and appointment of committees. Later in the day the delegates held a lively discussion on the subject of "Earthquake Hazards and Protection". One of the principal papers, read by L. H. Nishkian of San Francisco, will be published in full in the ARCHITECT AND ENGINEER next month. Another subject under discussion the first day was Engineering Services and the Code of Standard Practice."

On Saturday, October 13, the code committee on Appendix A made its report which precipitated an animated discussion of its technical features. The legislation committee also reported, followed by a discussion of the new Field Act and other building laws. Saturday evening the annual banquet was held with Sunday morning devoted to closing business and a report of the convention committees. W. Adrian and Mr. Popert arranged all the entertainment details.

COURT DECISION

[Concluded from Page 45]

"Design. A preliminary sketch, an outline or pattern of the main features of something to be executed, as a picture, a building, or a decoration, a delineation, a plan."—Webster's New International Dictionary, at Page 604.

"Architect. One who makes it his occupation to form plans and designs of, and to draw up specifications for buildings, and to superintend their execution.

"A contriver, designer, or maker."—Webster's New International Dictionary, at Page 120.

The rule which brings one within the classification of "architect" has been declared in various jurisdictions. In every instance where the term has arisen for interpretation, so far as we are able to ascertain, it has been held that one who makes plans and specifications for a building, and superintends its construction, is an "architect." In fact, the rule most commonly applied does not embrace the duty of supervision.

The combination of the term "Designer and Builder", their practical relation and association with architectural work, constitutes an appellation "which might indicate to the public" that the appellant was an architect.

The trial court concluded that it was the intent and purpose of the appellant to give the public such an impression and the appellant offered no evidence to avoid such conclusion.

Counsel has erroneously suggested a "strict" interpretation of the statute. He overlooks the provision of the Penal Code applicable hereto:

"The rule of the common law, that penal statutes are to be strictly construed, has no application to this code. All its provisions are to be construed according to the fair import of their terms, with a view to effect its objects, and to promote justice."

The Supreme Court of Tennessee recently had before it a matter where defendant (not an architect) used the term "Decorator and Designer". Obviously this is not as closely associated and identified with architecture as the designation "Designer and Builder" used by the appellant.

State Board, etc. vs. Rodgers, Vol. 69 (2d) No. 4, May 8, 1934, 1093, at pages 1093, 1094 and 1095: "The defendant characterizes his business as that of a decorator and designer. His work and talent, as he describes them, are more nearly those of an artist than that of a builder of structures.

"His interest is in the realm of aesthetics. When applied to the building trade, however, these qualities are proper characteristics of the architect.

"Architecture is defined in the Encyclopedia Brittanica as 'the art of building in such a way as to accord with principles determined, not merely by the ends the edifice is intended to serve, but by high considerations of beauty and harmony. * * * The end of architecture as an art is so to arrange the plan, masses and enrichments of a structure as to impart to it interest, beauty, grandeur, unity, power. Architecture thus necessitates the possession by the builder of gifts of imagination as well as of technical skill.'

"The practice of architecture necessarily includes the designing and drawing of plans for buildings, and since the defendant admits that he draws and furnishes building plans, his business is in clear violation of the statutes."

"Applied to the business of the defendant, section 7099 permits him to exercise many functions ordinarily included in the work of an architect, if he does not use an appellation designed to give the impression that he is an architect. But he is clearly prohibited from holding himself out to the public as qualified to draw building plans or to undertake the responsibility of superintending the work of construction, which involve the safety of the structures and therefore the safety of the public. These things he may not do, by himself or by his agents who are not registered architects."

In view of the foregoing and the points made on oral argument, we urge the affirmance of the judgment of the trial court.

DR. BAIN TALKS ABOUT COPPER

The depression has resulted in a stimulation of research in many quarters, and in this the copper industry has not been remiss. This was evident from the address of Dr. H. Foster Bain, managing director of the Copper and Brass Research Association, who was the speaker at a luncheon-meeting September 24 at the San Francisco Commercial Club, held jointly by the Producers' Council Club and the Northern California Chapter, American Institute of Architects. Dr. Bain, a distinguished mining engineer, one time director of the U. S. Bureau of Mines, in recent years has devoted his attention to the problems of application of copper in building with the result of several novel things of special interest to architects and engineers, which are just available on the market.

The problem of preventing corrosion of copper surfaces on the exterior of buildings where a burnished metallic effect is desired, has been solved, Dr. Bain said, by a thin coat of glass over the copper, sheets of which can even be bent in simple forms without breaking the protective coating. The architect thus now can have spandrels and other shapes of polished copper which will retain its luster indefinitely, the lacquers never having proven satisfactory for exterior work. From the transparent surface the engineers worked out colored glass finishes on copper, and buff colored enameled copper has found a use for the ceilings of tunnels where a light-weight, non-corrosive material with a light reflective surface is required. The enameled copper is being used for this purpose, the speaker said, in the tunnel of the statue of the Goddess of Liberty recently constructed by the Federal government.

The Copper and Brass Research Association also has just finished development of an entirely new technique of obtaining an immediate green patina on copper. The result, Dr. Bain said, is a verd antique which is chemically identical with that which forms after years of weathering but

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• This Koh-I-Noor holder No. 48 is large, handy, practical. It has no mechanism to get out of order. A turn of the metal point and the lead is held fast, without slipping. A turn to the left releases the lead.

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which on this coast forms especially slowly if at all. This traditional color of copper roofing has been frequently used on buildings of modern design, notably, on this coast, the Bullocks-Wilshire store in Los Angeles. Dr. Bain also said that a standard specification had been worked out for lead coated copper, which is found on all buildings of the San Francisco Civic Center, and this should avoid confusion and misunderstanding in architects' offices. Another standardization in nomelclature, he said, has recently been accomplished with the thin wall copper tube used with soldered fittings for fresh water lines in plumbing systems, a relatively new product in this country. Where formerly there was a confusing use of terms by the various companies there is now a Federal specification for three types of wall thickness so the architect and engineer can be sure he will get exactly what he has in mind.

Dr. Bain is in a sense a San Franciscan, having lived here some years ago. He was once publisher of a technical mining journal here, and later published a similar journal in London, England. He was associated with Mr. Herbert Hoover on the famed Committee for the Relief of Belgium.

Boulder Canyon Dolomitic Hydrated Lime

Used for Finish Coat interior plastering

San Francisco City and County Jail

ALBERT F. ROLLER and DODGE I. RIEDY . . *Architects*
WILLIAM MAKIN . . . . . *Plastering Contractor*

UNITED STATES LIME PRODUCTS CORP.
San Francisco Los Angeles

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Owing to the various crafts accepting the NRA code of fair competition, in some cases they have adopted a schedule of prices, and it therefore would be advisable to get in touch with these firms direct.
Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $35 to $40 per 1000 laid, (according to class of work).
Face, $75 to $90 per 1000 laid, according to class of work).
Brick Steps, using pressed brick, $1.10 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.75 sq. ft.
Common, f. o. b. cars, $15.00 job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126..00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots).

8x12x5½	$ 94.50
6x12x5 ½	73.50

Discount 5%.

Composition Floors — 18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Dnraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b.) Job. S.F.) $2.90 per bbl.
Cement (f.o.b. Job, Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Medusa "White" .....$ 8.50 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place, exclusive of forms, 30c per cu. ft.
4-inch concrete basement floor.....12½c to 14c per sq. ft.
4½ inch Concrete Basement floor .....14½c to 16c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Meduca Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—
Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 75c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.
Note—Add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$35.00 per M
No. 2 common	28.00 per M
Selected O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	48.00 per M
1x4 No. 3 flooring VG	42.00 per M
1x6 No. 2 flooring VG	48.00 per M
1¼x4 and 6, No. 2 flooring	52.00 per M

Slash grain—

1x4 No. 2 flooring	$39.00 per M
1x4 No. 3 flooring	34.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ 1.00 per bdle.
Redwood, No. 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.
1 1-16x2¼" T & G Maple	132.00 M ft.
⅞x3½ sq. edge Maple	140.00 M ft.

	13-16x2¼" T&G	⅝x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	

Laying & Finishing 13c ft. 11 ft. 10 ft.
Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—
O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel. 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel. 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.
Dining room cases, $7.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.
For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 29c per yard
Three-coat work .....40c per yard
Cold Water Painting .....10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. keg s,net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish No. 18 gauge wire mesh	1.50
3 coats Medusa finish No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.

2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile — Floor, Wainscot, Etc. — (See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE FOR 1933

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestor Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	$ 8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

BOOK REVIEWS

By Edgar N Kierulff

ANALYSIS OF CONTINUOUS FRAMES BY THE METHOD OF RESTRAINING STIFFNESS, by Earle Brewster Russell. Published by Ellison & Russell, Pacific Building, San Francisco; 73 pages; $1.10.

A revised edition of "Analysis of Continuous Frames by the Method of Restraining Stiffness," by Earle Brewster Russell, has been published by Ellison and Russell, consulting structural engineers of San Francisco. The new volume has been revised and brought up to date from the original edition published in 1932.

The book recently has been widely sought by architects and engineers in California for use in connection with school building design under the new state earthquake safety act.

The author has undertaken to develop a quick, accurate and straightforward method for the analysis of rigid frames or continuous beams, giving the results directly, without the use of simultaneous equations or a series of approximations. The method does not deal with actual loads, settlement of supports, or translations, until certain frame constants have been calculated; these constants being absolutely independent of the moment causing factors. From these constants, it is in most cases a very simple process to obtain the actual moments. It is, therefore, evident that the loads or other moment causing factors may be changed at will to suit maximum or minimum conditions.

"THE DESIGN OF RESIDENTIAL AREAS" (Basic considerations, Principles, and Methods) by Thomas Adams, Cambridge, Harvard University Press, 1934. Price: $3.50.

The Harvard City Planning Studies need very little introduction to the architectural profession. Their basic soundness is apparent and the thoroughness with which the material is handled, together with the wealth of detail, makes these volumes a source of correct and exact information.

This present book should appeal to the architect and engineer whose work is in field of city planning or who has leanings in that direction. It will be found a valuable aid and a friend on the reference shelf.

The volume is well illustrated with photographs, plans, maps and tables.

CONSTRUCTION MATERIALS INDEX

The first copy of the Construction Materials Index is off the press and ready for distribution.

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Architects will undoubtedly find the Index a valuable addition to their files. The information contained in the book is intended to assist the San Francisco practicing architect, construction engineer and general contractor to more readily obtain many and varied facts and other data required to function with accuracy and dispatch. The book also provides a medium where the manufacturer and supply dealers may furnish the construction industry with a properly compiled index of their products. The Index is indorsed by the Northern California Chapter the American Institute of Architects and the Northern Section, State Association of California Architects. The data contained in the publication was compiled and classified by E. L. Norberg, architect and chairman of the Standards Committee of the Northern California Chapter. The new book is well arranged, nicely printed and a credit to the publishers.

STAINLESS STEEL FOR BUILDINGS

That architects in many lines are becoming increasingly aware of the importance of stainless steel was apparent at the interest shown in the Columbia Steel Company exhibit at the recent California State Fair in Sacramento.

Many inquiries were registered by architects and engineers regarding the various samples of stainless steel which were on display.

The Columbia Steel Company, a United States Steel Corporation subsidiary, reports that most of the inquiries from architects were regarding decorating facades of buildings.

Also of interest to visiting architects was Columbia's 65 ft. display model of the San Francisco-Oakland Bay Bridge, which was furnished through the courtesy of the California Toll Bridge authority.

CREO-DIPT COMPANY

The Creo-Dipt Company of North Tonawanda, New York, has been reorganized and H. P. Kendal, Jr., has resumed active management of the business as president and general manager.

Mr. Kendal was one of the principals of the original Creo-Dipt business, almost from its inception.

Associated with the new president is Fred Engelking, chairman of the board; Stephen R. Kiehel, vice president, and W. W. Faulkner, secretary and treasurer.

"We will devote all our efforts to promoting Creo-Dipt stained shingles and shingle stains," said Mr. Kendal, "selling only through legitimate dealers, merchandising aggressively and working actively with dealers, architects, and contractors. It is our firm belief that the stained shingle house

lends itself better to American architecture than almost any other type of building material."

Plants will be operated in North Tonawanda, Cleveland, and Seattle.

COORDINATION IN SIZES OF BUILDING UNITS

Economies in the construction of buildings erected by tax - supported agencies can be effected by coordinating the sizes of building materials, the American Institute of Architects declares in endorsing the movement for uniform sizes fostered by the National Bureau of Standards.

The Institute points out that the development of such standards should not exclude or discourage the manufacture of odd sized brick for special purposes or aesthetic reasons.

"It is the intention of the coordination movement to confine activities to units for use in structures where economy in materials and labor are deciding factors, such as Federal, state, and local government buildings, commercial structures, industrial buildings, mass production projects, and low cost housing," it is explained.

"For these reasons there is nothing in the proposed project that should be objectionable to architects on the basis of being contrary to their desires for freedom in design. The minor adjustments in sizes of units will be negligible and should have the desirable effect of simplifying matters for the designer.

"The architectural profession is in position to play a most important part in the program. It is apparent that if architects throughout the country will specify definite sizes of units which have been designed to fit with other units to form a well-knitted structure, a demand will be created for such approved sizes which will automatically insure close cooperation from those engaged in producing such materials.

"A study of sizes of manufactured building units shows room for considerable improvement in correlation, especially in the case of units which go to make up a wall system, such as brick, tile, block, windows, etc. Variations in basic dimensions cause confusion in design and assembling and result in increased costs and faulty construction.

"The present lack of coordination and variations in sizes of building units, particularly between different sections of the country, should not be attributed to the vagaries of the manufacturers. Deviations from the standard sizes adopted by the masonry unit industries, for example, can, to a large extent, be traced to the demands of users of those materials and recognizing this situation, the manufacturers should not be too severely criticized for producing sizes which seem to fit the popular demand.

Dear Mr. Architect:

Our advertising this year in such magazines as California Journal of Development is stressing the value of proper and adequate lighting in commercial buildings.

It points out how merchants lose sales, office workers make costly errors, skilled workers fall down on quality and quantity of output — when lights glare or are too dim or are badly placed.

Aside from the strict economic view, there is the human side — the damaged eyesight, the fatigue, distraction and discomfort from poor lights.

We recognize in the architect the best single source of unprejudiced judgment in these instances. We ask you to go on as you have been doing — to urge building owners to provide generous sources of good light.

And if you have special problems where we can be of service, please call on us for whatever assistance we can give. We have no merchandise to sell; only a free advisory service available to California architects, builders and owners and lessees of buildings in which electric current is used.

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DEPARTMENT J-10

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"In order that a more stable unit may be maintained as a basis of measurement, the brick manufacturers throughout the country, with the helpful cooperation of all concerned, should be encouraged to adhere as closley as possible to the standard dimensions adopted by that industry.

"With the assurance that brick sizes would remain constant, leaders in other industries have indicated that the manufacturers of adjoining units will be glad to make such minor adjustsments in their products as may be necessary to conform to the requirements of the correlation pattern."

After widespread investigation into the many factors involved, it is reported by the Institute that the most satisfactory results for all concerned might be obtained by taking the standard common brick dimensions, 8 by $2\frac{1}{4}$ by $3\frac{3}{4}$ inches, with a slightly increased depth of $2\frac{1}{4}$ inches minimum to 2 4/10 inches maximum, and with a half-inch mortar joint as a basis of measurement for adjoining units.

"The slight increase in depth is needed to provide the desirable $1:\frac{1}{3}:\frac{1}{2}$ ratios for brick laid in any position," it is said. "These combinations seem to provide the most satisfactory basis for design of adjoining units, with the least disturbances to the manufacturing processes of the majority of industries. This is particularly true with regard to such materials as tile and concrete blocks.

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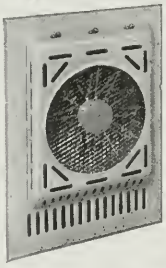

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HOME BUILDING REVIVAL

By JOHN H. FAHEY

Chairman, Federal Home Loan Bank Board

The first step on the Government's part in arresting the drift toward collapse of the home-financing system, imminent in the spring of 1933, took form in the Home Owners' Loan Act. Within fifteen months of the passing of this Act, the Home Owners' Loan Corporation had refinanced 492,648 home mortgages aggregating $1,476,980,000 and had 500,000 more in process of refinancing.

The action of the Corporation in thus protecting the market from being flooded with these distressed properties has arrested the downward spiral and saved existing home values. It has taken the pressure off home-financing institutions. Over $200,000,000 of the Corporation's funds have gone directly to closed institutions to release their frozen assets. More than 90 per cent of the vast sum already disbursed by the Corporation has been distributed to home-financing institutions. In these ways the Corporation has helped to preserve the home-financing structure.

The Home Loan Bank System, established in July 1932 as a permanent organization of the home-financing system, progressed steadily while the Home Owners' Loan Corporation was halting the deflation. By September, the Home Loan Bank System had 2,805 members with assets of $3,109,000,000. These institutions had a potential line of credit with the Federal Home Loan Banks of $237,600,000, of which they were using at the end of July only $85,587,000.

The Home Loan Bank System has provided some 3,000 home-financing institutions with a substantial reserve which protects them against fear of emergency pressure and from which they may borrow to make new loans should

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their own resources be inadequate to meet the demand.

In addition to the discount facilities of the Federal Home Loan Bank System, the newly authorized Federal Savings and Loan Insurance Corporation constitutes another form of protection to home-financing institutions. This corporation must insure accounts of the Federal Savings and Loan Associations and may insure those of eligible building and loan associations to the extent of $5,000 for each shareholder.

The primary purpose of this insurance, applications for which are now being handled, is to prevent the withdrawal of savings from thrift home-financing institutions and to increase the flow of funds to them for home financing.

Another source of credit are the Federal Savings and Loan Associations. The $100,000,000 of Federal investment in these local, mutual, thrift, home-financing institutions, modeled on the best features of mutual savings banks and building and loan associations, seems likely to constitute but a fraction of the increased funds which they will make available for home-financing.

Building figures for the last four years, compared with population increases and with property losses by fire and depreciation, permit of no doubt that the nation needs new housing. With the need for new housing and the availability of credit for new home construction the two principal obstacles which have held up the private house program are now rapidly being removed. One of these is lack of public confidence, which is being expelled as employment increases and credit is liberalized: and the second is the difficulty of adjustment to the general withdrawal of second-mortgage financing.

The depression put the second-mortgage structure practically out of business and the Government

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hopes to prevent its return. It was a costly, inefficient and dangerous incubus on home ownership. The Government seeks to eliminate the need for the second mortgage by encouraging the making of first mortgages up to 75 and 80 per cent of the soundly appraised value of the property.

Reform takes time and the transfer of most home financing from the old basis of short-term.

STATE OFFICERS

Officers elected at the recent convention of the State Association of California Architects are as follows. At large — President, Harold C. Chambers, Los Angeles; Vice President, Wm. I. Garren, San Francisco; Secretary, Ellsworth Johnson, San Francisco; Treasurer, Robert H. Orr, Los Angeles.

For the Northern section these officers were named: President, Wm. I. Garren, San Francisco; Vice President, A. Appleton, San Francisco; Secretary, Ellsworth Johnson, San Francisco; Treasurer, Harry Michelson, San Francisco.

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THE RUSSIAN WAY

[*Southwest Builder & Contractor*]

Will Rogers is seeing Russia (at least he was when this was written) that is what the Soviet high officials want him to see of it—and finds many things to amaze him. Arthur Brisbane in his column Today, commenting on one of the humorist's messages remarks: "How do you suppose Russia manages her affairs so well that Rogers reports: 'I never saw so many buildings going up in my life.' Not only has Russia no unemployed, but everybody, man or woman, able to work is compelled to work. Nobody is paid by the government to 'go through the

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motions' of working, standing by the roadside pulling up one weed every five minutes, or listlessly swinging a broom where no broom is needed.' "

Mr. Rogers was in Moscow when he made the report which Mr. Brisbane referred to. Russia's industrialization program, and consequently its building activities, are centered in Moscow. Centralization of industry is vital to continuance of the Soviet regime. There are few industrial centers in the new Russia outside of Moscow, and chief of these is Leningrad, the former capital—St. Petersburg. The Soviet workers are the rank and file of the Communist party, which is the governing body of Russia, and they must be kept in hand by the leaders who find the task simplified by concentrating them in the cities where they can be watched and watch each other, for politically, in the communist set-up, every man is his brother's keeper.

So Moscow in particular, and the other industrial centers in Russia, are beehives of activity. Hundreds of thousands of workers have been concentrated in Moscow to build and to man the large industrial plants erected there. Housing must be provided for them and so hundreds of large apartment buildings are being erected for them in a reclaimed area adjacent to the old city. No wonder Rogers remarked: "I never saw so many buildings going up in my life". All Soviet workers are employed now. Russia's unemployment problem will come later on when all the factories and mills have been built and the demands for more housing slacken.

Soviet Russia's industrialization program has been cleverly planned and adroitly publicized. Everything has been done on a big scale. Russia has built the largest tractor plant in the world, the largest power plant, the largest smelting furnace and the So-

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viet Palace now being started to house government activities will be the highest and the largest building in the world. That appeals to the imagination of the Soviet workers and it has made an impression on the people of the country. But in bigness there is often weakness and Soviet leaders are even now awakening to a realization that it would have been better if they had built more plants and smaller ones. A plant may be so large that it is unwieldly and its operation uneconomical.

M. M. O'SHAUGHNESSY

The death of M. M. O'Shaughnessy, former city engineer of San Francisco and designer of the Hetch Hetchy water system, passed away suddenly of heart failure Friday, October 12, just 15 days before the scheduled Hetch Hetchy celebration commemorating the completion of his life's work.

Mr. O'Shaughnessy was 70 years old. A few days before his death he called at the office of THE ARCHITECT AND ENGINEER and left an article and pictures descriptive and illustrative of the Hetch Hetchy project, which will be published in the November issue.

Mr. O'Shaughnessy was born in Limerick, Ireland, in 1864, and was graduated with honors from the Royal University, Dublin, in 1884. A year later he came to the United States and became an assistant engineer for the Southern Pacific.

Later he went into real estate development, laying out the town of Mill Valley. He was chief engineer of the California Midwinter Fair here in 1893-94. His next employment was in Hawaii, where he laid out water and sewer systems and was employed as consulting and construction hydraulic engineer on 20 sugar plantations.

Returning to California in 1907, Mr. O'Shaughnessy became chief engineer for the Southern California Mountain Water Company.

While thus employed he built the Morena Dam at San Diego, for which he was awarded the James Laurie medal by the American Society of Civil Engineers.

Mr. O'Shaughnessy was appointed San Francisco city engineer in 1912 by the late James Rolph, Jr., then mayor. His primary task was the construction of the great water project, which included the building of O'Shaughnessy Dam in Yosemite National Park and the system of aqueducts, tunnels and pipe lines by which the mountain water now flows into San Francisco.

OREGON CHAPTER

The September 18th meeting of Oregon Chapter, A.I.A., was attended by Messrs. Parker, Schneider, Crowell, James, Bear, Aandahl, Clausen, Stanton, Morin, Roehr, Church, Jacobberger, Wright, Linde, Knighton, Wallwork, Wick, Whitney, Tucker, Howell.

Mr. Woodmansee was a visitor.

After dinner, the meeting was called to order by President Parker.

The minutes of the meeting held June 19th were read and approved.

Mr. Jones made a written report for the building laws committee expressing approval of the New Electric Code for Portland. It was moved by Aandahl and seconded by James that the report be accepted.

Mr. Crowell reported for the professional practice committee on the question of recommending a depository for receiving bids. Linde moved and Aandahl seconded that this question be laid on the table.

Mr. Stanton reported for the education committee.

Mr. Parker announced that a committee of the City Club has made a report on the old post office question that is in harmony with the Chapter's policy.

The matter of Associates whose terms have expired was explained.

Mr. Parker read a letter written to Folger Johnson congratulating him upon his appointment to the Planning Commission. Mr. Howell reported that Johnson will be glad to receive suggestions from the Chapter.

Mr. Whitney moved that Mr. Jacobberger be appointed to appear before the O.B.C. and urge them to request the mayor to appoint technically trained men to fill the vacancies on the Planning Commission, and that the Chapter write the mayor, thanking him for appointing Folger Johnson, architect, to the commission. Seconded by Mr. Stanton and carried.

Mr. Roehr emphasized the main points of the report of the publicity committee which was read at the June meeting.

Mr. Stanton moved that members be urged to use the term "A.I.A." and "Registered Architect" and that Associates use the term "Registered Architect" whenever possible. Seconded by Tucker and carried.

The question of publicity awards was discussed.

It was moved, seconded and carried that the competition committee, with the chairman of the publicity committee, be instructed to work out a program for making publicity awards in each of several classes of work.

Mr. James proposed a "Building Center" to aid architects in securing work that does not now reach them.

Mr. Stanton made a report on the status of the work on the McLaughlin house.

Mr. Jacobberger discussed the bill sponsored by the registered architects of Oregon, to be presented to the next legislature, the Chapter to be prepared to consider the bill at the next meeting.
—L.D.H.

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NOVEMBER 1934

...This Month...

Montezuma Mountain School Adopts Pueblo Architecture for its Buildings

■ ■ ■

Government Bureaucracy Threatens to Demoralize Architectural Profession

■ ■ ■

Earthquake Hazards and Protection Discussed by Leading San Francisco Engineer

■ ■ ■

Water Delivery from Hetch Hetchy Reservoir Marks Culmination of Notable Engineering Project

■ ■ ■

Measured Drawings of San Carlos Presidio Church, Monterey

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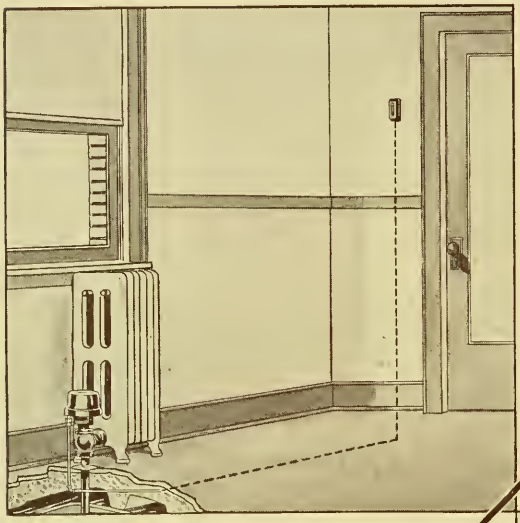

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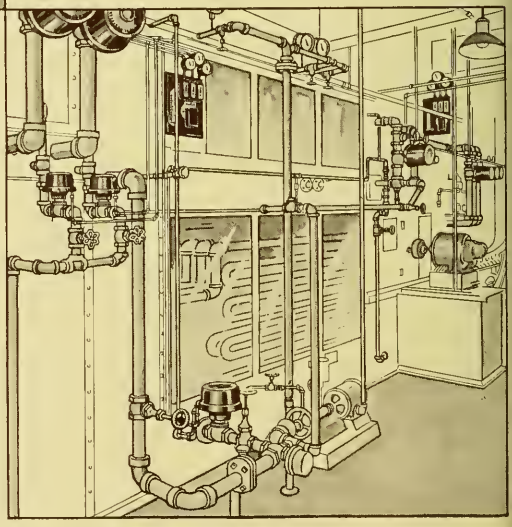

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Notes and Comments

IT IS unfortunate that some recognized authority on the termite situation was not invited to address the State Association of California Architects at its recent convention. Here was a subject upon which every architect needed to inform himself. Hardly a day passes but new evidence of the damage being wrought by these destructive wood borers is brought to light. Architects should know how to safeguard our buildings from termite attack. It seems the profession, as a whole, does not take the situation seriously. Not a few have criticized this magazine for giving so much space to the subject. If they realized the gravity of the situation they would thank those who are striving to check what has become a standing threat against the safety of our homes and the investment therein.

The great corporate interests in California have recognized this hazard to their investments and have contributed generously in cooperation with the University of California, thus sharing the large expense of the investigation of the termite situation. The fact that the first edition of the Termite Committees book, Professor Kofoid, editor-in-chief, on Termites and Termite Control has been sold out and that a second edition is on the press, is evidence sufficient to convince one of the interest that has been awakened in the subject. Public interest is evidenced, too, by the National Broadcasting System arranging for Professor Kofoid to discuss termites over a nation wide hook up on the evening of December 4th.

The Termite Investigations Committee has prepared specifications that are intended to safeguard new homes from termite attack. These specifications are available in the termite book. A number of houses have been designed in accordance with their provisions. It is time for a general acceptance of a local building law making it mandatory to incorporate in a building contract these preventative measures before a permit is issued. It is recommended that the State Chamber of Commerce Building Code Committee incorporate these requirements in the proposed new statewide building code.

* * *

BELOW will be found some of the outstanding comments of Institute members to a questionnaire sent to 300 architects for the purpose of obtaining their views on the organization and its method of operation:

"Make the organization one hundred per cent representative of the profession. Take in all of the best known violators, (you can do more with them in your midst than if they are on the outside). Stress the necessity for comradery among the architects. A man may knife a competitor with impunity only if that competitor isn't a real close friend of his. You don't do a dirty trick to someone you know as Bill or Jack."

"I believe that the architect needs and will demand a national organization devoted principally and aggressively to forwarding his business practices and interests."

"I hope the new laws loosen up the Institute a little. It is pompous, it struts."

"In my opinion a large membership means nothing. I believe that I have met more than three thousand architects. They need the leadership of such men as are active in the Institute, but I would not advise many of them to join if they could. In my opinion membership in the Institute should be a goal that every architect should seek and not a promiscuous mixture of the efficient and inefficient."

"The solution is to promote "good architecture," *not* selfish propaganda for the architect."

"I am very dubious about affiliating ourselves with state societies. We would thereby confer on them the benefits of membership and yet we would have far less control (if any) over their behavior than we now have over our own members—and that is none too much."

"Remove everything from the Institute format which jeopardizes its major purposes of advancing the cause of good architecture."

* * *

ARCHITECTS are not at all in sympathy with the Federal Government's plan to employ private architects in a consulting capacity on large projects. They would much prefer to have the government appoint an architect for each building and hold him responsible for its design and construction. That plan, architects say, would enable the appointee to spend his fee at home by keeping his office force employed and thereby benefit the community in which he resided. When Federal buildings are designed in Washington, the city or town where the building is to be built receives no benefit until the contracts are awarded and even then often times an outside builder gets the job.

David J. Witmer, of Los Angeles, a regional director of the American Institute of Architects, told the delegates to the recent State Convention of California Architects, in San Francisco, that the relations between the Government and the architectural profession are today at the lowest point in twenty years. He announced the Institute was emphatically opposed to centralization of Federal and state architectural work. A recommendation was made by the committee on professional betterment, headed by William Clement Ambrose, that the State Associations discourage all efforts toward architectural practice by bureaus such as is now maintained by the Treasury Department in Washington.

* * *

AFTER 30 years the Palace of Fine Arts in Mexico City, which is expected to be a center for tourists to our neighboring Republic, has been completed. The building which dates back to long before 1904, and which was known as the National Theater of Mexico, has cost the Mexican government $8,500,000. Most of the work restoring the building has been done since 1932. Since that time there has been included a Museum of Plastic Art, Conference Room, Museum of Popular Arts, a Book Museum and Library, and a room for temporary expositions. In this room there is a superb mosaic curtain made up of almost a million pieces of opalescent crystal of about two square centimeters each. This mosaic represents a panorama of the Valley of Mexico, with its volcanos. It is a rigid curtain mounted on an iron structure in a bronze frame, and is lifted by electric power and lowered by gravity.

As the addition to the theater itself contains rooms for Fine Arts, Popular Arts, and Book Museums, it was decided to name it "The Palace of Fine Arts". The attention of the visitor is immediately attracted, upon entering the theater, to the decorations in the vestibule, as well as in the Grand Central Hall. The latter has an inside height equal to that of the nave of the Cathedral of St. Peter, in Rome. The decoration is made up of marbles of different colors, from various sections of the Mexican Republic, combined with Mexican onyx. Ten thousand square meters of marble were used in the interior alone.

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EASTERLY VIEW OF CRYSTAL SPRINGS WATER TEMPLE SHOWING CASCADE

C. D. LUNDGREN, ARCHITECT

(Description on Page 41)

VOLUME 119
NUMBER 2

THE ARCHITECT AND ENGINEER

NOVEMBER
1934

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Contents

Frontispiece . EASTERLY VIEW OF CRYSTAL SPRINGS WATER TEMPLE
C. D. Lundgren, Architect

TEXT

11 . . . . PUEBLO ARCHITECTURE
Frank J. Taylor
17 . . . . BUREAUCRACY
19 . . . . BRICK CHIMNEYS
A. L. Brinckman
23 . . . . EARTHQUAKES—HAZARDS AND PROTECTION
L. H. Nishkian, C.E.
27 . . . . TERMITES' SWARMING TIME
A. A. Brown, C.E.
34 . . . . WATER FROM HETCH HETCHY
M. M. O'Shaughnessy
41 . . . . WATER TEMPLE
By C. G. Lundgren, Architect
44 . . . . SERVICE
By H. J. Brunnier, C.E.
47 . . . . ADVERTISING
By Albert P. Lasker
57 . . . . WITH THE ARCHITECTS
60 . . . . CHAPTER AND CLUB MEETINGS

PLATES AND ILLUSTRATIONS

10 . . . . GARDEN VIEW OF MAIN DORMITORY, MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS
Requa and Jackson, Architects
11-16 . . . MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS
Requa and Jackson, Architects
Entrance Stairs
Sketch of Proposed Temple
Front View of Main Dormitory
Typical Corridor
Entrance to Library
Corner of Dormitory
The President's House
22 . . . . THE BLACK SHEEP RESTAURANT, BERKELEY
H. R. Yelland, Architect
28 . . . . PENCIL SKETCH
By Frank Gerner
29 . . . . PORTFOLIO OF PHOTOGRAPHS AND MEASURED DRAWINGS OF SAN CARLOS PRESIDIO CHURCH, MONTEREY
34 . . . . M. M. O'SHAUGHNESSY, ENGINEER
35 . . . . O'SHAUGHNESSY DAM ON TUOLUMNE RIVER, YOSEMITE NATIONAL PARK
36 . . . . MOCCASIN VILLAGE
37 . . . TYPICAL HIGH SIERRA SCENERY AND PRIEST DAM
38 . . . . CONCRETE BUNGALOWS AND HETCH HETCHY HOSPITAL, LIVERMORE
40 . . . . LAKE ELEANOR DAM
41 . . . . WATER TEMPLE
C. G. Lundgren, Architect

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Photo by C. S. Hiller

GARDEN VIEW OF MAIN DORMITORY, MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS, CALIFORNIA
REQUA AND JACKSON, ARCHITECTS

THE ARCHITECT AND ENGINEER

NOVEMBER 1934
VOLUME 119
NUMBER TWO

Pueblo Architecture

for Montezuma School

by Frank J. Taylor

AT Montezuma Mountain School, high in the Santa Cruz Mountains west of Los Gatos, there has been evolved a type of architecture peculiarly suited to buildings which must stand the wear and tear of youth. Curiously enough, this style of construction was learned directly from the Indians, and is an adaptation of the pure pueblo type of building.

At first thought it might seem that the pueblo structure has little place among the redwood forests which surround this interesting mountain school for boys. It was with some apprehension that the founder of the school, President Ernest Andrew Rogers, erected the initial pueblo structure on the Montezuma campus. This building made such a harmonious feature of the scene that Professor Rogers and his architects, Requa & Jackson of San Diego, journeyed to New Mexico, land of the Pueblos, to make a first hand study of the pueblo types in mountain and forest surroundings.

A FASCINATING ENTRANCE TO UPSTAIRS ROOMS, DORMITORY AT MONTEZUMA SCHOOL

There, in the region above Santa Fe, they found that the

early native Americans had built pueblos not only on the plains and mesas, but in the forests and on hillsides as well. Professor Rogers and Mr. Requa spent several weeks studying the native pueblos, taking pictures of corners and angles and gathering ideas appropriate for the school's library, dormitories and other buildings.

The evolution of the architectural theme of Montezuma Mountain School for Boys is an interesting story, particularly as President Rogers tells it. The school itself occupies a tiny mountain valley, surrounded on three sides by dense redwood forests. An intriguing feature of the valley is a small lake on the shores of which a group of redwoods form a natural outdoor amphitheater. The school buildings are constructed in a semi-circle surrounding the commons, which is the athletic field. Eventually the projected buildings will virtually surround the commons.

"When we first came up here the place was a mountain ranch, which derived its name from the old Spanish grant known as Rancho Montezuma," explained Professor Rogers. "During the first year the pioneer class of boys and the teachers held class in the farm buildings and under trees during the morning while we built the old dormitory and eating commons with our own hands.

Indian Architecture

"While the wooden frame buildings did very well temporarily, and they are still popular with the boys, they did not fit into any architectural scheme. I was attracted to the idea of Indian architecture by my study of Montezuma, chief of the Aztecs. We had taken the ranch name for our school. The word Montezuma, I learned, meant 'Let your arrow fly at the stars' and that became the motto of our school.

"I thought that Aztec type of building might be appropriate for the school, but after studying it, concluded that our own New Mexico pueblo types would be more practical for the dormitories, the library, class rooms and faculty houses. However, for the Temple, which will be the center of

SKETCH OF FUTURE MONTEZUMA MOUNTAIN SCHOOL
LOS GATOS, CALIFORNIA
Requa, Jackson and Hamill, Architects

the group and the gathering place and administration building, we plan a building of pure Aztec architecture.

"At first I was unable to find anyone in Northern California who was agreed with me that the pueblo type house would be appropriate for our environment and climate. I took clay and modelled the first small house, then had a larger model built by a contractor, so that we might see how it looked with the redwood forests for a background. The effect was so pleasing that we went ahead with the building and it became our library.

"Then I met Mr. Requa, who had made a lifetime study of the pueblo type and who had used that architecture so effectively in the buildings of the Pan-Pacific Exposition in San Diego. After he and I had spent a summer together in New Mexico, studying pueblos, we built a large dormitory in pure pueblo style. After I had seen the early New Mexico houses I made up my mind that the pueblo was the ideal building for housing boys for several reasons.

Pueblo Style Fascinating

"In the first place a pueblo is fascinating to a boy. He can climb all over it. It has passageways, nooks and crannies, which hold a great mystery to a youngster and suggest all kinds of play. The covered hallways are particularly good in wet weather—boys can play outdoors without getting wet, and get plenty of healthful exercise, whereas they might be cooped up in ordinary buildings. Another appealing feature is that no two rooms are exactly alike. Boys like variety. Even the doors and windows are different. Every door opens to an outside passageway. The decks and roofs provide places for small groups of boys to gather and work at whatever interests them.

"Finally, it is practically impossible for a group of boys to damage a pueblo, no matter how strenuous their play. The outside walls are cement, virtually indestructible. There are no window or door sills to be damaged. In the rooms themselves we built the chests of drawers, the bunks,

Photo by Ralph Young

FRONT VIEW OF MAIN DORMITORY, MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS, CALIFORNIA
Requa and Jackson, Architects

Photo by C. S. Hiller

TYPICAL CORRIDOR OF DORMITORY, MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS, CALIFORNIA

REQUA AND JACKSON, ARCHITECTS

Photo by Ralph Young

ENTRANCE TO THE LIBRARY, MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS CALIFORNIA

REQUA AND JACKSON, ARCHITECTS

the desks and other furniture right into the walls, so that there were no spaces where dirt might collect or things might be thrown out of sight. A pueblo is almost fool proof, and makes an ideal home for youngsters."

Professor Rogers says that the only serious problem encountered in adapting the pueblo to Northern California environment grew out of the difficulty of making the setback buildings water proof. This was accomplished by using water tight roofing papers and moisture proof Monolith cement in wall construction. The only change necessary in the pueblo type of construction was that extending beams were omitted, because of the tendency of moisture to seep in around them.

Walls of the Montezuma School pueblos are hollow. The air space between the interior and exterior layers of cement forms a good insulation against cold, heat and sound. In fact, it was found that the customary heating units, installed at the time of construction, provided too much heat and they were replaced by smaller units. While the pueblo building costs a little more to construct, this additional expense is more than offset, according to Professor Rogers, by the saving in fuel and upkeep, which is practically nil.

THE PRESIDENT'S HOUSE, MONTEZUMA BOYS' SCHOOL, LOS GATOS, CALIFORNIA

CORNER OF PUEBLO DORMITORY, MONTEZUMA MOUNTAIN SCHOOL, LOS GATOS

Engineering Features

Walls of the Montezuma buildings, counting the air space, are from two to three feet thick. The concrete surfacing varies from one inch to three inches in thickness. Beams are of carefully seasoned redwood, cut from the forests which form a part of the Montezuma grounds, several hundred acres in extent. Outside, the redwood is oiled. Inside, it is left natural. Hallways are true reproductions of pueblo passageways. Fireplaces in the meeting rooms follow the In-

[Continued on Page 40]

Bureaucracy

Washington Criticised

GOVERNMENT bureaucracy threatens to demoralize the architectural profession, Ralph Walker, President of the New York Chapter of the American Institute of Architects, charges in a letter sent to all candidates to Congress in New York State. Mr. Walker declares that in carrying out the public buildings program the Treasury Department is destroying the private practice of architects by forcing them to accept temporary employment in Washington under a bureaucratic regime.

Mr. Walker protests the failure of the Treasury Department to keep its promise that the design of all buildings costing over $60,000 would be entrusted to private architects, working in their own localities. Instead, he says, architects are compelled to divorce themselves from their offices and homes and to work on a salary basis as members of the large staff which is being built up in the Office of the Supervising Architect in Washington.

When this employment ceases, according to Mr. Walker, the architect finds himself in worse circumstances than ever. The Government, he points out, is becoming an agency in the elimination of the architectural offices which "have made American architecture the foremost in the world today." There is evidence, he says, that the bureaucratic principle is being extended to the entire construction industry by other departments of the Government.

"Throughout the country there is a growing concern over the increasing invasion of private business by the Federal Government and the rapid growth of the bureau to effect this," says Mr. Walker's letter.

"Along with others, the architectural profession is becoming more and more apprehensive of the way in which bureaucracy is encroaching on the field of their work. A climax has been reached in the recent order of the Treasury Department that private architects are no longer to be commissioned for the work on the Public Buildings program of the department, but that this work is to be done by the Supervising Architect's Office of the Procurement Division.

"When the Public Works program was inaugurated architects believed, and were encouraged to believe, that their services would be brought into play, since the program was designed to provide work for the entire construction industry, upon the functioning of which it is generally agreed recovery now rests. At the beginning of the year the Treasury Department promised

that private architects would be commissioned to handle all projects costing over $60,000.

"The order of June 29, 1934, refutes all this, and the Supervising Architect's Office has been steadily increasing its forces to handle the enormously increased volume of work. Draughtsmen, engineers, and technicians have been brought to Washington and enlarged quarters have been provided in which to house these workers. Architects in private practice have been asked to come to Washington and accept temporary positions on a salary basis, to design the buildings and supervise the augmented forces of the Supervising Architect's Office."

Responsible officials of the Treasury Department have intimated that this procedure applies only to buildings costing under $60,000, adds Mr. Walker, who presents a list of 38 projects proceeding under the new order which, he claims, "refutes" these intimations. All of these projects involve more than $60,000, some running as high as $1,500,000.

"The Treasury Department," Mr. Walker continues, "in justifying this procedure states: 'By so doing the Government avails itself of the skill and experience of the designer and his knowledge of local conditions, and at the same time greatly expedites the completion of the drawings by affording the architects the facilities of the Supervising Architect's Office and its experience in checking the design and securing prompt approval of the various departments that will occupy the building. The desirability of expeditious results and in no sense discrimination against the architectural profession prompted the order.'

"Without in any way questioning the sincerity of this statement, it is plainly evident that the procedure adopted can have only a most demoralizing effect on the architectural profession. There is every evidence that private building, except in the case of small residence work, will be practically non-existent for some time to come—indeed it is because of this that the Public Buildings program is being pushed so frantically at this time.

"But instead of the program operating to enable existing architectural organizations to continue in business until such time as private building picks up, the Federal Government, through the procedure adopted, becomes an agency in the elimination of those offices which have, through their continuous experience and development, made American architecture the foremost in the world today.

"The architect, who through force of circumstances must accept the temporary employment thus offered, is faced with two alternatives: He must give up his office entirely if his lease can be terminated, thus increasing local unemployment, or he must carry it along at a total loss.

"In either case he must remove himself from the sphere of his normal activities and abandon contact with such prospective commissions as might develop. The draughtsmen, engineers, and technicians are likewise uprooted from their homes and must either move their families to an already overcrowded city for a period of questionable duration, with all the upsetting effect on children in school, or else suffer the burden of double living expenses. And at the termination of the temporary employment both the architects and the draughtsmen are likely to find themselves in a worse predicament than ever.

"The principle involved is of grave concern not only to the architectural profession but to the entire construction industry, for there is evidence of its being adopted in other phases of the industry and by other departments of the Government.

"Were the Treasury Department hon-

estly attempting to aid in the recovery program it should be able so to coordinate and organize its efforts as to offer the same services to the private architects performing the work in their own offices, without disrupting the normal practice and without uprooting men from their homes and business surroundings. Its inability to achieve this can only be taken as further proof of the inherent tendency of the bureau to enhance its size and prestige."

The New York Chapter of the Institute asks each candidate for Congress in this State to give his position on the following questions:

"Do you believe in increasing governmental bureau activity at the expense of private industry?

"If you do not, what action will you take, if elected, to eliminate this growing activity?"

A similar letter, it was said, will be sent to candidates throughout the country by the 67 Chapters of the institute.

Brick Chimneys

by A. L. Brinckman

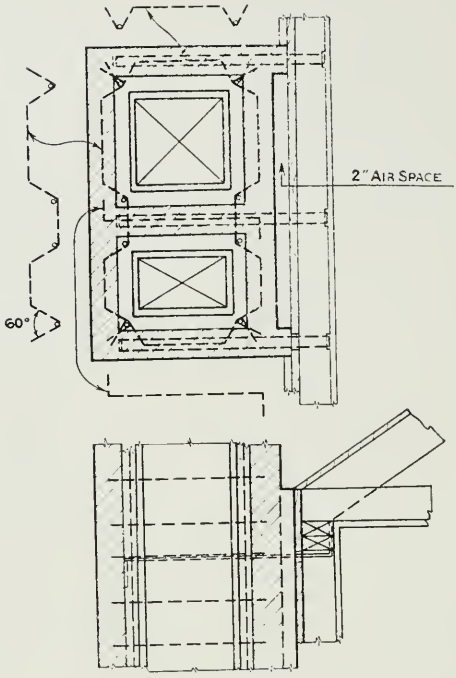
UNDER date of July 26, 1933, the Common Brick Manufacturers Association of Southern California issued a "Better Brick Construction" bulletin which had for its subject the construction of small reinforced brick chimneys calculated to resist lateral forces.

This bulletin will be found most useful in such designing, but there are two points not fully covered that should be emphasized, namely, the construction of solid wythes between all flue linings, and the incorporation of vertical rods in the brick masonry of 4-inch thick chimney walls by the use of suitable horizontal "tie-backs."

A suggested method by which this desirable condition may be obtained is outlined below in the nature of a specification. The standard requirements for reinforced concrete hearths is also included therein.

1. Brick used in constructing chimneys shall be new, hard burned common brick without defects.

2. Mortar for chimneys shall be proportioned by volume as follows: One part portland cement, ½ part lime putty or dry hydrated lime, and 4½ parts of sand. (Note: 5.3 sacks of cement, 2.65 cu. ft. of lime putty or dry hydrated lime and 24 cu.



SKETCH SHOWING METHOD OF CONSTRUCTING REINFORCED BRICK CHIMNEY

ft. of sand will make 1 yard of such mortar, and ¾ of a yard of mortar will be required to lay 1000 bricks.)

3. All reinforcing steel and ties shall be structural grade billet steel, free from rust, scale and defects, and shall be round deformed bars in every instance.

4. Every flue lining shall be separated from any other flue lining by a vertically continuous solid wythe either of brick or concrete at least 4 inches in nominal width. Every flue lining shall be separated from the chimney walls by a mortar joint at least 1½ inches thick, and such joint shall be continuous around such flue lining for its full height.

5. Vertical rods not smaller than ½ inch in diameter shall be provided and shall be placed in the corners of every rectangular flue area so that a complete covering of mortar is assured for each rod. The rods shall be in one piece, or shall be lapped 60 diameters and hooked at the ends. Vertical rods shall be securely supported during construction so that no swaying may occur.

6. The vertical reinforcement shall extend from the top of the chimney to at least 10 feet below the point of support against the building, and not less than a distance below such point of support equal to the height of the unsupported (cantilver) portion of the chimney above such point of support, whichever distance is the greater. (Note: Generally it will be found that the use of four ½ inch round deformed bars per flue lining will be adequate for ordinary chimneys up to 25 feet in height above the point of lateral support.)

7. Horizontal ties of ¼ inch round rods and of a type similar to that indicated in the sketch shall be placed around the vertical steel for its entire length, at not more than 17 inches o. c. and from a point 3 feet above the lateral support to a point 3 feet below such support, the horizontal ties shall be placed at not more than 6 inches o. c. All mortar joints shall be ¼ inch thicker than the steel placed in them.

8. Horizontal strap anchors shall be installed at the highest point of adequate lateral support and there shall be at least two such anchors to a chimney. Anchors shall occur at each side of the chimney and at every wythe. Such anchors shall be made up of ⅜ inch by 1½ inch straps, bent down 4 inches into the chimney wall near its outer face, and bent up 4 inches into a ½ inch by 2 inch notch on the inside face of the top plates. The anchor shall be placed so as to be at least ½ inch below the bottom of the lowest plate, and a 1 inch by 2 inch notch shall be cut in the sheathing for each anchor. See sketch.

9. Hearths shall be constructed of reinforced concrete slabs not less than 4 inches in thickness, and such slabs shall be at least 2 feet wider than the fireplace opening. Such slabs shall extend at least 20 inches beyond the face of the fireplace and to the outer face of the chimney, but no 4-inch slab shall extend more than 3 feet beyond the nether point of support which acts as its fulcrum. Reinforcement for such 4-inch slabs shall consist of ½ inch round deformed rods at 8 inchs o. c. (placed perpendicular to face of fireplace) with spacer rods of ⅜ inch round deformed rods at 9 inchs o. c. placed parallel to the face of the fireplace. Spacer rods shall be securely tied to the cantilever rods, and all rods shall run to within 2 inchs of the edges of their respective slab boundaries. Rods shall be placed not less than 1½ inches below the top of the slab and not more than 2 inches below such point. A covering of masonry at least 2 inches thick shall be placed on top of every such reinforced concrete hearth, or the hearth shall be increased in thickness to 6 inches and the steel placed 3½ inches below the top of such 6-inch slab.

10. The design constants recommended are as follows: (All but Es, Eb, and n may be increased 1/3.)

Es=30,000,000	fs=18,000#/sq.in.
Eb=1,500,000	fb=450#/sq.in.
n=(Es/Eb)=20	v=60#/sq.in.
See (2) re mortar.	u=75#/sq.in.

It will be found, in general, that a wind pressure of 20#/sq.ft. on the widest face of the ordinary small chimney always exceeds O.1g and that such pressure is always less than O.2g. It will also be found that the recommendations in (6.) are adequate for either a 20#/sq.ft. wind pressure or O.1g.

THE BLACK SHEEP RESTAURANT, BERKELEY
W. R. YELLAND, ARCHITECT

Earthquakes

Hazards and Protection

by L. H. Nishkian, C. E.

SAN FRANCISCO engineers became earthquake minded immediately after 1906, when we experienced that tremendous earth disturbance in the Bay region. In 1925 the Santa Barbara shock gave the Southern engineers an inkling of what was coming. They were perhaps, consciously or unconsciously, still under the spell of the policies of the Los Angeles Chamber of Commerce and looked upon earthquakes only as a remote possibility, something for just San Francisco to worry about. In 1933, however, the realities of the matter forced themselves on the south and the southern engineers became fully earthquake conscious.

Now, just what have we learned and what do we know about earthquakes? There is much definite information as to fault lines, epicent velocity of earthquake waves, the various kinds of waves, etc., which is of interest to seismologists but only of secondary interest to the structural engineer. We are very much at sea as to just what motions the ground has under a building during an earthquake. We know that the motion usually starts with a sudden impact, that it is irregular, that the horizontal component usually predominates. These are all qualitative terms. Quantatively we know little that can be called definite. What about amplitudes, accelerations, periods? We only surmise the value of these quantities, as there have been very few direct measuremtnts with the exception of measurements of periods by distant siesmographs and a few recent accelerograph measurements.

In the absence of difinite information the recourse of the engineer is to observe the behavior of structures and make approximate assumptions.

Behavior of Structutes

The wide variation in the assumed quantitive factor in an earthquake is a result of the widely different deductions made from the observed behavior of structures. Observations indicate that periods of destructive earthquakes are seldom outside of the limits of one-half second to two seconds. Amplitudes are assumed to vary from about one-half inch in rock to four to 12 inches in soft ground or mud. When we come to accelerations we have a greater variation of values and at least one glaring inconsistency.

Accelerations for consideration in the design of buildings are advocated beginning as low as 1 per cent of gravity and as high as 20 per cent or more, that is from .32 feet per second per second, to over eight feet per second per second. It is usually advocated that the greater accelerations be assumed in alluvial and softer areas. Now

A paper read at the annual meeting of the Structural Engineers Association of California in Santa Maria, October 12.

we have no records to indicate that elastic vibrations in soft soils induced from a given source have a higher acceleration than such vibrations in hard ground or rock. In fact, just the contrary is probably true. We would expect smaller periods and amplitudes and higher acceleration in rock than in soft material. Perhaps it is easy to explain how this inconsistency has come about. We have all observed that more damage is done to the average building in soft ground than in hard ground.

Many of us assume that acceleration is the only factor in an earthquake that causes damage. If this assumption is true, it follows that there being greater damage in soft ground the acceleration in soft ground must be greater than in hard ground. Conversely, if it can be shown, and I believe it can, that in a given earthquake accelerations in soft ground are lower than in rock, it should follow that acceleration is not necessarily the most important factor producing damage in buildings. Perhaps, the heretofore neglected factor of amplitude, should be given some consideration.

The San Francisco Custom House is often pointed out as an example of what good brick work will do, for it suffered no damage in 1906 though built over a filled in area. This building is of excellent brick work with heavy walls, the lower story being over three feet thick. My explanation of its behavior is that the heavy cement mortar walls were able to resist the comparatively low acceleration of the soft ground over which it was built. If this same unyielding building had been built on a rock foundation, I am of the belief that much damage would have occurred due to the probable high acceleration and frequency, though smaller amplitude, to be expected on rock.

Observation of failures in X-bracing in various buildings and tank towers in the Long Beach earthquake indicated that lateral forces equivalent to horizontal accelerations of 20 to 30 per cent of the acceleration of gravity were developed in these structures. The few accelerograph records available verified these values. But many of these structures suffered no serious damage other than the failure of the X-bracing.

In the San Francisco earthquake scores of buildings which were not designed for any lateral forces at all remained standing after the walls and partitions had been shattered or sufficiently loosened to permit freer movement of the frame in the lower stories. It is common knowledge that frame buildings suffer no damage except to such relatively rigid elements as plaster. Masonry buildings which are supported on fairly rigid walls undoubtedly suffer the greatest in earthquakes.

Quakes Not Just Accelerations

In all of the above I am leading to the point that in our design methods and in our building codes we must break away from, shall I say, our lazy assumption that an earthquake is just an acceleration. Every earthquake shows that amplitudes and frequencies are important factors, in many cases more important than accelerations. Any solution to a problem which neglects some of the important factors should not be dignified by being called a scientific or engineering solution. This is a problem for California engineers. We cannot expect others to solve it for us.

We are making perhaps unconsciously some progress in the right direction. Most of us accept the principle of relative regidities in distributing the assumed lateral load on various members. If a group of columns are constrained to move together we agree that the lateral loads carried by various columns are proportional to their respective regidities. It should not be a difficult step

to agree that if a group of buildings side by side are given a common movement at the ground level that the induced forces acting on the buildings are proportional to their respective rigidities. The analogy, of course, is not perfect in that the tops of the buildings are not constrained to move together. Nevertheless, this anology is close enough to bring out the point I wish to make.

The code committee of the Northern Engineers originally proposed the approximate formula $T=2\sqrt{\frac{W}{3Hg}}=1.81\sqrt{\frac{W}{Hg}}$ where W=total weight of building above ground in pounds. H=force in pounds required to deflect frame 1 inch at second floor and T=period of building in seconds. It was further provided that the seismic factor could be reduced by the factor $3\ T^2$.

The seismic factor to be applied thus becomes a factor of the period of the building. This, of course, is another way of considering amplitudes and taking advantage of flexibility in buildings.

The Proper Seismic Factor

The criticism has been advanced that the formula too much resembled a thesis on sound. I might reply that perhaps it is advisable for engineers to make themselves familiar with such matters. However, to save some people a headache, the northern committee has put this very same provision in a simpler form as follows: $C=K\frac{H}{W}$ where C=seismic factor W and H as before and K is a constant for a given structure varying from 2/10 to 5/10 depending on the soil conditions. 2/10 in good ground to 5/10 in soft ground. The value of C is limited to a minimum of 2 per cent and a maximum of 10 per cent.

No claim is made that this is the ultimate solution of the problem of determining the proper seismic factor for structures. It is far from it. But it is a step in the right direction and one which I believe will lead to progress. By this method the seismic factor is to some degree made a function of the elastic properties of the structure to which it is applied.

The engineers in the north and in the south have had rather divergent views on seismic factors due perhaps to the fact that Los Angeles has a height limitation of 150 feet on buildings, whereas San Francisco has none. The formula mentioned above will permit the designer to choose the type of earthquake resistence he wishes to use in a structure and then determine the seismic factor to be used.

It is admitted that if a building is designed for a seismic factor high enough, no other factors need be considered. For low buildings a high seismic factor, even as high as 20 per cent, does not put an impossible burden on the structure and for that reason we all usually design our lower buildings say up to six or eight stories with rigid resisting units. As we get higher than that, a high seismic factor becomes a very severe and often impossible burden and we are forced to depend to a large extent on the flexibility of the structure to resist earthquakes. We do not always admit in so many words that we are relying on the flexibility of the structure, nevertheless, that is the tacit assumption. In view of the fact that we have not experienced the collapse of a tall building, either in the north or south, we are entirely justified in designing on that basis.

If we adopt this suggestion of the northern committee, the seismic factors on firm ground will vary from 2 to 10 per cent depending on the rigidity of the resisting units and similarly on soft ground from 5 to 10 per cent.

Termites

Swarming Time

by A. A. Brown, C. E.

EVIDENCES of subterranean termite attack are not easily discovered because of the concealed life of these insects. However, their presence is indicated by the periodic emergence of the swarming alates usually in bright sunlight following the first fall rains, revealing in general the location of active colonies. Termites with fully developed wings began to appear in colonies broken into by the writer in late July and have been increasing in numbers as the fall months approached. A colony of these insects will usually be found to contain thousands of winged individuals. These remain in the subterranean quarters with the workers for weeks, and even months, awaiting the first heavy autumnal rain When that has fallen and the soil is thoroughly soaked, the insects crowd to openings provided by the workers, and on the first clear day that follows the rain, if the temperature is not too cool, they emerge by the thousands. Careful comparison of data gathered in various parts of the state shows that the zone of first emergence coincides with the zone of first rains from the sea coast inward.

The first rains bring out those nearer the surface, but for the colonies far back under houses or wide pavements, a second or even a third or fourth rain may be necessary to penetrate to their quarters, and those making up the last autumnal swarms may loiter in the galleries until December or January. If the fall is very dry the majority may stay thus penned up until late in the season.

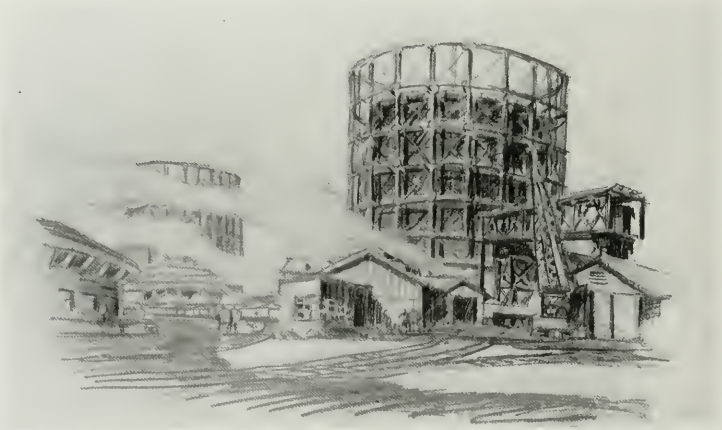
The flight of termites is weak and the direction is largely determined by the prevailing winds; most of the insects soon sink to earth in the immediate vicinity, though a few may flutter upward for sixty feet and be borne along for as much as 200 yards. Many do not fly aloft at all, but drop their wings while running about on the ground. After mating has been completed each pair is known as a royal pair; the female is the queen, and the male is the king. The pair select a crevice, or crack, in the earth, enter it, and at a depth not definitely known, establish the royal cell where the queen lays eggs. Each pair mating during the swarming season is the potential beginning of a new source of termite infestation. It is important to locate and destroy termite colonies at the swarming period.

The swarming season of the dry-wood termites usually begins about July and continues intermittently through the fall months, increasing somewhat in number until middle or late October, when the peak of the swarm occurs. Sporadic flights follow the peak of the swarm.

The alates of the damp-wood termites swarm about dusk, from 5 until 8 o'clock, and are usually attracted by electric lights. The reproductive forms of this specie have been taken in flight during every month of the year, although the majority of such swarms occur during August, September, and October. On warm, sultry, quiet evenings these winged forms emerge and start on their search for mates and new homes.

The openings through which termites emerge from either the ground or buildings lead to the colonies. Locate these colonies and destroy them with an effective insecticide such as the Reilly Transparent Penetrating Creosote. Saturate the ground in the vicinity of the colony and soak the nest.

As a further aid in locating termites in the soil adjacent to buildings, a trap stake may be used very successfully. This is a pointed stake two inches by two inches of soft white pine, new lumber of strong pine odor, twenty-four inches long. The stakes are driven into the soil close to the building, sometimes under it, and left in place about three months. At the end of that period if termites have found the stake it may be badly eaten. The termites come to the stake from the nest through runways in the soil, and these runways will convey the insecticide to the nest. The stake is carefully removed, insecticide poured into the stake hole, and the top of the hole is filled with a wad of cotton or other material and then covered with soil.



GAS TANKS IN OAKLAND ESTUARY
Pencil sketch by Frank Gerner

HISTORIC AMERICAN BUILDINGS SURVEY

NATIONAL PARK SERVICE
U. S. DEPARTMENT OF THE INTERIOR

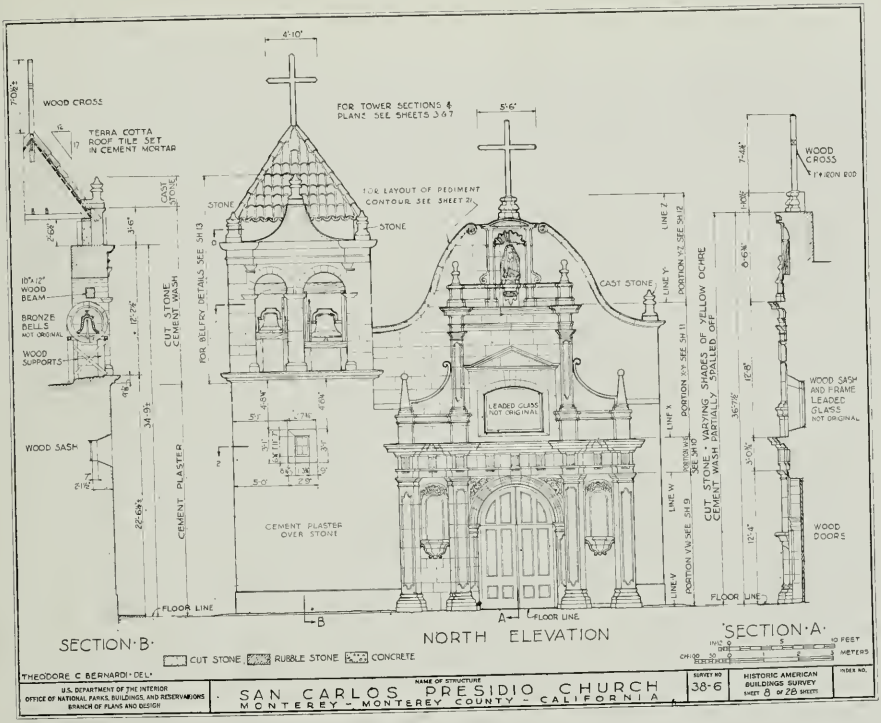
DISTRICT NO. 38
IRVING F. MORROW
DISTRICT OFFICER

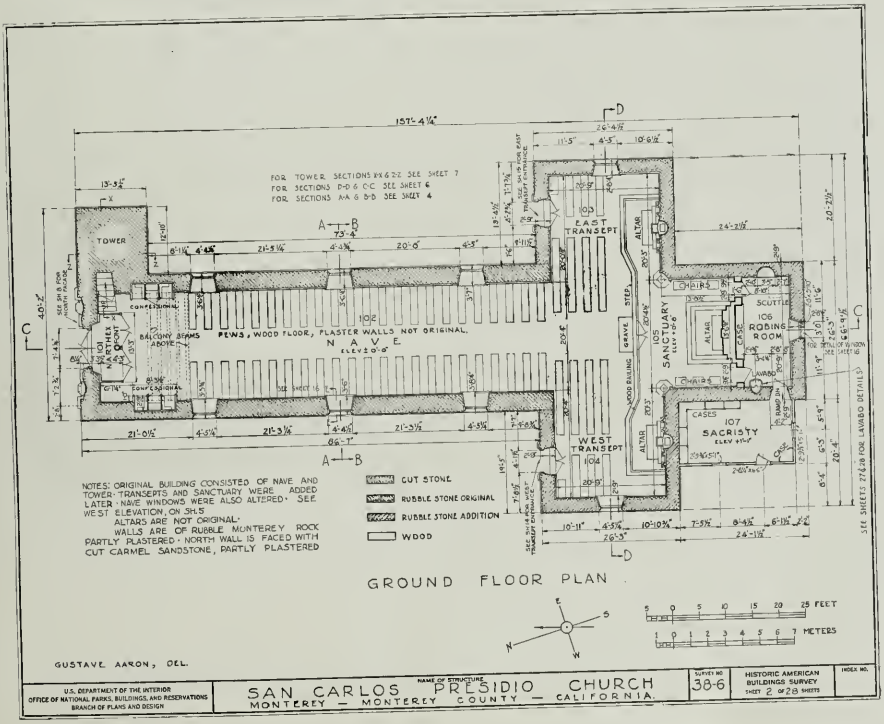
Portfolio No. Six—San Carlos Presidio Church, Monterey

DETAIL OF BELL TOWER.
San Carlos Presidio Church, Monterey

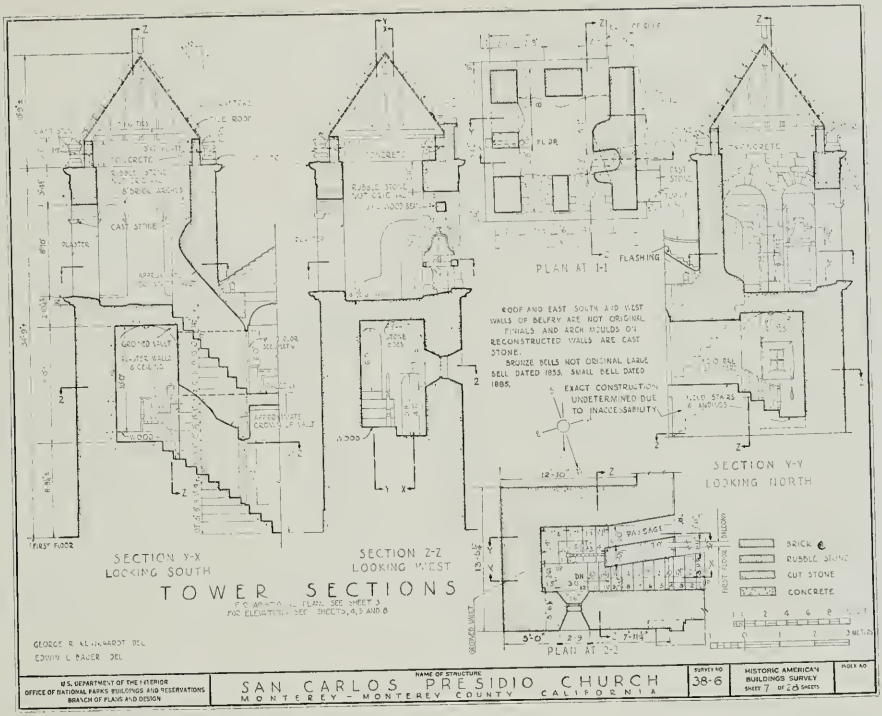
SAN CARLOS PRESIDIO CHURCH, MONTEREY, CALIFORNIA

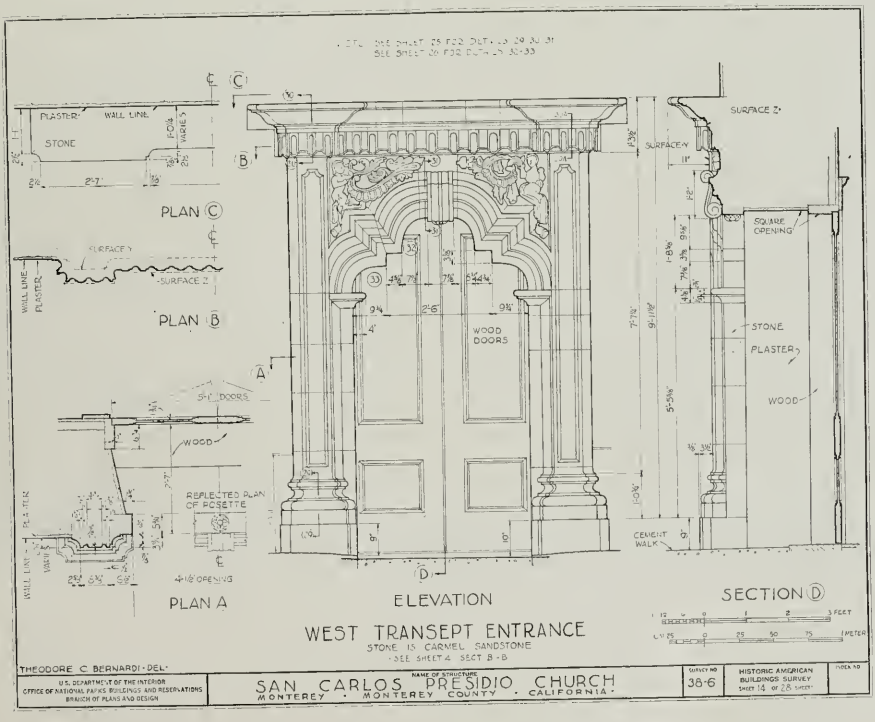
FOR NORTH ELEVATION AND GROUND FLOOR PLAN SEE PAGE ON RIGHT


WOOD CROSS
TERRA COTTA ROOF TILE SET IN CEMENT MORTAR
CAST STONE
10"x12" WOOD BEAM
BRONZE BELLS NOT ORIGINAL
WOOD SUPPORTS
WOOD SASH
CUT STONE CEMENT WASH
CEMENT PLASTER
FOR BELFRY DETAILS SEE SH 13
FOR TOWER SECTIONS & PLANS SEE SHEETS 3 & 7
FOR LAYOUT OF PEDIMENT CONTOUR SEE SHEET 21
STONE
CAST STONE
LEADED GLASS NOT ORIGINAL
CEMENT PLASTER OVER STONE
FLOOR LINE
WOOD CROSS
1" IRON ROD
WOOD SASH AND FRAME LEADED GLASS NOT ORIGINAL
WOOD DOORS
CUT STONE - VARYING SHADES OF YELLOW OCHRE CEMENT WASH PARTIALLY SPALLED OFF
SECTION·B·
NORTH ELEVATION
SECTION·A·
CUT STONE
RUBBLE STONE
CONCRETE
THEODORE C BERNARDI · DEL ·
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS, BUILDINGS, AND RESERVATIONS
BRANCH OF PLANS AND DESIGN
NAME OF STRUCTURE
SAN CARLOS PRESIDIO CHURCH
MONTEREY - MONTEREY COUNTY - CALIFORNIA
SURVEY NO 38-6
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 8 OF 28 SHEETS
INDEX NO.


157'-4¼"
FOR TOWER SECTIONS X-X & Z-Z SEE SHEET 7
FOR SECTIONS D-D & C-C SEE SHEET 6
FOR SECTIONS A-A & B-B SEE SHEET 4
TOWER
CONFESSIONAL
BALCONY BEAMS ABOVE
PEWS, WOOD FLOOR, PLASTER WALLS NOT ORIGINAL.
NAVE
ELEV ± 20'-0"
EAST TRANSEPT
WEST TRANSEPT
SANCTUARY
ALTAR
CHAIRS
SCUTTLE
106 ROBING ROOM
LAVABO
CASES
107 SACRISTY
WOOD RAILING
GRAVE STEP
SEE SHEETS 27 & 28 FOR LAVABO DETAILS
NOTES: ORIGINAL BUILDING CONSISTED OF NAVE AND TOWER · TRANSEPTS AND SANCTUARY WERE ADDED LATER · NAVE WINDOWS WERE ALSO ALTERED · SEE WEST ELEVATION, ON SH.5
ALTARS ARE NOT ORIGINAL·
WALLS ARE OF RUBBLE MONTEREY ROCK PARTLY PLASTERED · NORTH WALL IS FACED WITH CUT CARMEL SANDSTONE, PARTLY PLASTERED
CUT STONE
RUBBLE STONE ORIGINAL
RUBBLE STONE ADDITION
WOOD
GROUND FLOOR PLAN
25 FEET
METERS
GUSTAVE AARON, DEL.
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS, BUILDINGS, AND RESERVATIONS
BRANCH OF PLANS AND DESIGN
NAME OF STRUCTURE
SAN CARLOS PRESIDIO CHURCH
MONTEREY — MONTEREY COUNTY — CALIFORNIA.
SURVEY NO 38-6
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 2 OF 28 SHEETS
INDEX NO.

CLOSE-UP OF TOWER, SAN CARLOS PRESIDIO CHURCH, MONTEREY, CALIFORNIA
DETAILS OF TOWER AND WEST TRANSEPT ENTRANCE ON RIGHT


PLAN AT 1-1
SECTION Y-X
LOOKING SOUTH
SECTION Z-Z
LOOKING WEST
SECTION Y-Y
LOOKING NORTH
PLAN AT 2-2
ROOF AND EAST SOUTH AND WEST WALLS OF BELFRY ARE NOT ORIGINAL. FINIALS AND ARCH MOULDS ON RECONSTRUCTED WALLS ARE CAST STONE.
BRONZE BELLS NOT ORIGINAL LARGE BELL DATED 1853. SMALL BELL DATED 1886.
EXACT CONSTRUCTION UNDETERMINED DUE TO INACCESSABILITY.
BRICK
RUBBLE STONE
CUT STONE
CONCRETE
TOWER SECTIONS
FOR ADDITIONAL PLANS SEE SHEET 3
FOR ELEVATIONS SEE SHEETS 4, 5 AND 6
GEORGE R. REINHARDT DEL
EDWIN L. BAUER DEL
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS BUILDINGS AND RESERVATIONS
BRANCH OF PLANS AND DESIGN
NAME OF STRUCTURE
SAN CARLOS PRESIDIO CHURCH
MONTEREY - MONTEREY COUNTY CALIFORNIA
SURVEY NO 38-6
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 7 OF 28 SHEETS
INDEX NO


PLAN C
PLAN B
PLAN A
ELEVATION
SECTION D
WEST TRANSEPT ENTRANCE
STONE IS CARMEL SANDSTONE
SEE SHEET 4 SECT B-B
SURFACE Z
SURFACE Y
SQUARE OPENING
STONE
PLASTER
WOOD
WOOD DOORS
REFLECTED PLAN OF ROSETTE
CEMENT WALK
THEODORE C. BERNARDI DEL
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS BUILDINGS AND RESERVATIONS
BRANCH OF PLANS AND DESIGN
NAME OF STRUCTURE
SAN CARLOS PRESIDIO CHURCH
MONTEREY · MONTEREY COUNTY · CALIFORNIA
SURVEY NO 38-6
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 14 OF 28 SHEETS
INDEX NO

M. M. O'SHAUGHNESSY, Chief Engineer of the Hetch Hetchy Project, who passed away a few days before its completion.

Editor's Note: This article, briefly describing the Hetch Hetchy project, was written by Mr. O'Shaughnessy for this magazine a few days before his sudden death from a heart attack on October 11th, last. It is to be regretted that he could not have lived to see this, his greatest engineering achievement, realized. The article is published just as Mr. O'Shaughnessy wrote it in anticipation of the ceremonies which would mark the completion of the project, and which took place on October 29th.

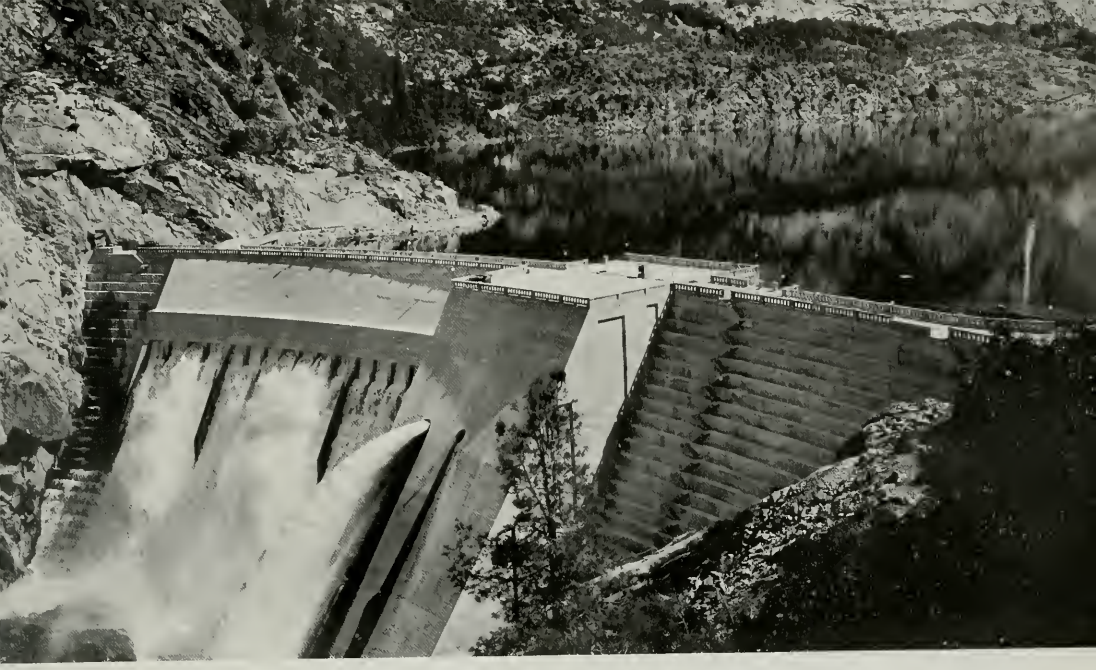
Water

Engineering Triumph

by M. M. O'Shaughnessy

PLANS for bringing to San Francisco the pure water from the snowfields of the Sierra, first visioned over 60 years ago, are to be realized in October. The tunnel through the Coast Range Mountains, where the last excavation was completed in January, is now being lined with concrete. Somewhat less than two miles of lining is still to be placed and upon its completion the 150-mile aqueduct will be ready to deliver water from Hetch Hetchy reservoir in Yosemite National Park by gravity flow to Crystal Springs reservoir in San Mateo County.

The bringing in of this water is a most gratifying culmination of a project definitely planned in 1901 under the administration of the late Mayor James D. Phelan.



O'SHAUGHNESSY DAM ON TUOLUMNE RIVER IN YOSEMITE NATIONAL PARK

The dam has a total height of 344 feet which will be increased to 430 feet at a cost of $3,500,000. The present dam was completed in 1923 at a cost of $7,000,000.

It was obstructed in every possible way by zealous foes, but doggedly advanced against these obstacles. After 12 years of battle, a congressional grant, known as the Raker Act, signed by President Wilson in December, 1913, gave the city permission to build dams and conduits in the national park. Certain stipulations in the act required the city to begin construction immediately, but prohibited bringing in the water as long as sufficient other water was available for the city's use. Consequently the plan of construction adopted was first to complete the devolpment of electric power at Moccasin Power House thus bringing the city a total revenue of $19,000,000 during the construction period and then to construct the remaining portion of the aqueduct on the most economical time schedule aiming at completion by 1932. Postponement of the predicted date of completion from that date to the present time was caused by contingencies which could not have been foreseen.

Two additional jobs approved by the voters in November, 1933, are being undertaken under the National Industrial Recovery Act. One of these is the building of a second bay crossing pipe line at a cost of about $4,500,000 to increase the pipe capacity to 100 million gallons daily. The other, the enlargement of O'Shaugh-

MOCCASIN VILLAGE FROM PRIEST GRADE ON BIG OAK FLAT ROAD TO YOSEMITE

PICTURE SHOWS POWER HOUSE, EMPLOYEES' COTTAGES, REGULATING RESERVOIR AND DAM, AND TRANSMISSION LINE LEADING TO SAN FRANCISCO BAY.

TYPICAL HIGH SIERRA SCENERY
Courtesy Yosemite National Park Service

PRIEST DAM AND RESERVOIR

CONCRETE BUNGALOWS FOR POWER HOUSE EMPLOYEES AT MOCCASIN

HETCH HETCHY HOSPITAL, LIVERMORE, ALAMEDA COUNTY
The City of San Francisco maintains a 34-bed hospital for the care of employees.

nessy Dam at Hetch Hetchy, from its present height of 344½ feet to 430 feet, will provide additional stored water to run Moccasin Power House continuously at full load and increase the city's power revenue an average of $225,000 annually. This work will cost about $3,500,000.

The most difficult work in the system was the construction of the long tunnel through the Coast Range Mountains, south of Livermore. The tunnel is 10½ feet in diameter, of finished concrete. It consists of a section 25 miles in length, the longest tunnel ever attempted by man, and a 3½-mile tunnel, joined by 0.6 mile of steel and concrete pipe.

Enemies of the Hetch Hetchy project claimed that this tunnel could never be built. Certain it is that the engineers encountered and overcame obstructions that appeared insurmountable. One great difficulty was ground that swelled and squeezed to crush the heaviest timbers that could be used. Sometimes the bore, about 17 feet in diameter, would close so small in a few days that a man could barely crawl through it. The squeezing was overcome by lining the tunnel with gunite concrete instead of using timbers. In extreme cases high early cement was used in the gunite and an air space was left outside of the gunite, into which the ground might swell while the cement was taking its set.

Quicksand gave trouble several times, twice filling the tunnel for several hundred feet from the face. After allowing the water to drain from it a small tunnel was driven through it and later widened to full tunnel size.

Two gases were encountered, methane and sulphuretted hydrogen, the former dangerous on account of its inflammability and the latter on account of its toxic effect when absorbed into the blood stream. Both of these added to the difficulty of construction.

The loyalty and energy of the employees was well shown in two instances. When city bonds were unsalable in the open market the employees banded together in an association which bought bonds at par and sold them at the market price paying the difference out of a fund derived from a 10 per cent voluntary contribution from each employee's monthly pay. Thus the work continued, saving the city immense sums and keeping hundreds of men in employment.

When the new Charter went into effect requiring that all construction costing more than $1000 be done by contract, the Hetch Hetchy Department, which hitherto had been carrying on the tunnel construction on a direct day labor basis, was lowest bidder by $557,670. The contract was awarded to the department and through the ability of the employees, work valued at the low bid prices at $4,811,656.64 has been done at an expenditure of $4,224,743.12.

The total bonds issued for completion of the project amount to $86,100,000, of which $15,000,000 have been retired on the installment plan by annual payment of $1,000,000 by the taxpayers. The $19,000,000 received from sales of electricity have also been applied to relieve the burden of the taxpayers.

San Francisco is to be congratulated on the completion of the above project for this cost, when a similar one in New York—the Ashokan system, 40 miles shorter in length —has cost $185,000,000.

The Hetch Hetchy system is soundly conceived, conservatively planned, and honestly built. When ultimately enlarged to its fullest extent it will provide water suffi-

cient for the needs of 4,000,000 persons, together with 250,000 horsepower of hydro-electric energy. Eventually it will reduce water rates approximately one-half and will bring industry, population and wealth to "The city that knows how."

LAKE ELEANOR DAM WHICH FORMS THE SECOND IMPOUNDING RESERVOIR IN YOSEMITE NATIONAL PARK

A buttressed arch structure 1260 feet long, 70 feet high with crest elevation of 4661 feet.

PUEBLO ARCHITECTURE

[Continued from Page 16]

dian idea. In spite of the devotion to the pueblo style, the rooms and halls of Montezuma School are extremely liveable and inviting. They impress one as being entirely natural and in keeping with the spirit of the school, and are not oddities in any sense.

Professor Rogers says that the main pueblo, built to house 80 boys, has come up to his expectations in every way. The next dormitory, he says, will be built in wings, each large enough to accommodate a group of from 12 to 16 boys. Each group will be a tribe. This innovation will represent a return to the true pueblo idea, for the Indians had their units, each large enough to accommodate a family.

The Temple, which eventually will rise high above the other buildings, will be in the true Aztec style because that is more impressive. The Montezuma Temple will house the facilities for music, dramatics, and pageantry which form a fundamental part of Professor Rogers' program for increasing the potential capacity of each boy by making it easier for him to learn. Environment likewise is a paramount consideration and in the pueblo type, Professor Rogers believes he has found the logical building for an out-of-doors school.

Water Temple

by C. G. Lundgren, Architect

AFTER a journey of 167 miles, through our mountain ranges and across the San Joaquin Valley, the waters from the Sierra snows flow into the Crystal Springs Lakes at the mouth of the Pulgas Tunnel in San Mateo County. At this location in a setting which only the oak studded hills of the Peninsula can give us, the City of San Francisco decided to celebrate the arrival of those waters on October 28, 1934, the date of the completion of the life work of her great engineer and builder, M. M. O'Shaughnessy. It was gratifying indeed to me to be selected to design a structure fitting such an occasion and such a background. Although the building was planned for only a day's use with materials which created an illusion of stone, durability and age, it has already started a movement for its preservation. Hence this article.

Photo by Geo. E. Fanning

VIEW OF TEMPLE LOOKING SOUTH SHOWING FLOOR PLAN
C. G. Lundgren, Architect
(Note three oaks which help to create the illusion of age and permanency).

It is desired that just credit be placed where it belongs. San Francisco possesses in its Water Temple at Sunol a noble creation of architecture by Willis Polk, which has become a symbol of water to us. In mass and general proportions only, the author wanted to recall to the public mind this fine structure or symbol, which so faith-

*The Pulgas Tunnel runs through the Coast range for a distance of 25 miles, the longest tunnel bored by man. That it should be named Pulgas, which in Spanish means "flea" is absurd.

fully reproduces the order of the Temple of Vesta at Tivoli. However, at Crystal Springs, by the use of a substructure which bridged the aqueduct, and by the use of a terrace in front of the Temple forming a Rostrum or speakers' platform, an original composition is obtained in some respects more like its Roman predecessor in that it, too, had a high base and was placed adjacent to a small cliff. Certainly the dramatic effect of the sound and sight of the clear water flowing through the structure and forming a cascade as it drops to stream level is most forceful.

In viewing the building and accompanying photographs, it must be borne in mind that the Temple with its landscaping and other features was completed in two weeks actual construction time preceded by nine days in study, design and making complete working drawings and details. The nature of the problem and the materials precluded the use of any ornament whatever (except in the cast Corinthian capitals). The twelve columns have no flutes and no bases, and there are no curved profiles in the entablature, a fact which should be interesting to the student as it demonstrates that the fundamental structure and not added ornament make good design.

The success of the stone or marble effect is due to the selection of a special wall board which was cut to actual stone sizes, the edges bevelled with special cutting tools, and each piece laid up separately as if it were a heavy block rather than ½" material. This same material was used on the roof, giving unity to the composition. It seemed that red tile which could be borrowed from our leading tile manufacturers, sounded a foreign note. No paint was used except to obliterate nail heads and to protect floors.

In conclusion, if the few days given to study for this design were increased to months of study on a permanent building, a monument worthy of this splendid setting could be produced. The Temple now dominates the whole lake valley, a three mile vista of meadow and lake, which in several years will fill and bring the water to the Temple's edge. The present canal about 800 feet long, could be shortened and widened and landscaped to form a reflecting pool as seen from the highway. It seems only proper that the end of this great aqueduct should be treated with honor.

Ever present in all things which sing of beauty there is an undertone of pathos, and this note was accented by the untimely passing of Engineer O'Shaughnessy, the "Chief" as he was called by his associates, who could not occupy the chair on the platform beside our President's representative, Secretary of the Interior, Harold J. Ickes. The promise voiced in the Biblical inscription which ornamented the Temple's frieze was amply fulfilled:

"I will make the wilderness a pool of water and dry land springs of water, the streams whereof shall make glad the city".

Service

Engineers favor it

by H. J. Brunnier, C. E

IN THE planning and construction of any structure there are four fundamentals to be considered. They are utility, stability, aesthetics and supervision.

The first consideration must be utility. That is, the building must be so planned as to serve efficiently and economically to the fullest extent the purposes for which it is intended to be used.

Stability must be considered concurrently with utility, so that the structure will resist the elements and forces of nature, that is, deterioration, wind, earthquakes, etc.

At the same time, without jeopardizing utility or stability, all structures should be made pleasing to the eye. Too frequently the aesthetic features have been developed first without due economic consideration of the structural safety of the component parts of the building.

On account of the large human equation entering into construction, careful and competent supervision is necessary to insure the proper execution of the plans and specifications.

To acquire the ability to plan and execute the fundamentals mentioned requires years of training and experience. Tremendous strides have been made in the building industry by the continual development of new materials, methods and devices and it is no longer possible for an individual to be capable of performing, efficiently, all the services required in designing and constructing modern-day housing facilities. Therefore the practice of specialized services has developed. Structural engineering is one of them and we are gathered here for several days to discuss mutual problems in a friendly and understanding atmosphere to develop a procedure by which we may better serve society.

Strength in Numbers

The day of the individualist is past and any business or profession that is to occupy its rightful position in society must band

A talk before the Structural Engineers Association of California at their annual meeting in Santa Maria, October 12.

together in order to improve themselves the better to serve the public. This is not an altruistic or idle saying, but is a fact that has been recognized by successful men, who are still active in the scheme of things today. They are sounding the warning that stubborn and self-centered men must be persuaded to work together. Our paths of the past are strewn with disastrous results, of cutthroat competition and disputes between individuals. Cooperation between competitors is the only hope of preserving the trades and professions.

Owen D. Young, as chairman of the board of the General Electric Company, has said that the solution of business problems lies in group action.

Charles M. Schwab of the Bethlehem Steel Corporation has said that the strength of an organization lies in the individual integrity and loyalty of each member as expressed in his relationship with every other member.

He further said that the weakness of an organization lies in that very human trait—selfishness—in which the individual sees only the immediate gain to himself, without regard to his fellow members, the industry of which he is a part, or the fact that there is usually a day of reckoning.

In the last quarter of a century business has recognized that the giving of service is profitable. Business and professional men have organized themselves into vocational groups and service club groups. In the service clubs group men of different vocations fraternize in the spirit of fellowship and experience has shown that their ideals for vocational service are practical in that it is a sound basis upon which to achieve real business and professional success.

The objectives of these service clubs are that service is the basis of all worthy enterprise; that ethical standards in business and professions are essential; that acquaintance should be developed as an opportunity for service and that the worthiness of all useful occupations should be recognized and dignified in each occupation as an opportunity to serve society. The mere fact that these service clubs have extended their organization and activities into nearly all of the countries of the world is prima facie evidence that leading business and professional men are seriously endeavoring to encourage and foster ideals for business relationships.

Service a Watchword

Associations of structural engineers are of recent origin and their objectives are in accordance with the service trend. In our constitution we say, "The object of this society shall be to promote by closer contact and better mutual understanding the highest standard of structural engineering service, to discourage detrimental and unethical practices, to foster a wider appreciation and knowledge of the value of skilled engineering service, to the end that the practice of structural engineering shall serve and advance the best interests of the client, the community and the public."

In the application of our objects we have three group relations:

1—Buyer-seller relationship.

2—Relationship with competitors.

3—Relationship of employers with employees.

Under the buyer-seller relationship we are honor bound by the profession to serve our clients in the highest degree of efficiency and in return for which the client is obligated to pay a reasonable fee for the services rendered. Unfortunately there are many examples on record of the reverse relationship, in that the engineer has accepted a fee and then limited his services accordingly. Time sooner or later discloses

the deficiency of service with the result that such practices not only injure the engineer involved but discredit the profession. Since the public only views the finished structure and has little or no knowledge of construction it is one of our obligations to educate the public to the fact that the safety and welfare of people in and about a structure depends on its stability and to obtain stability efficiently and economically requires a structural engineer qualified by training and experience.

Under the competitor relationship, experience has proven conclusively that vocational groups must organize to afford the opportunity of acquaintance and in the atmosphere of fellowship by friendly contacts develop friendships that will ripen into confidence. Confidence in each other is the only thing that will produce united or group action so necessary for social or vocational service. It is not possible to entirely eliminate the selfish human element but anything that the profession does to improve its members in their three relationships will in the long run benefit the public.

Engineers in Public Service

We should encourage and develop our members to take a keen interest in civic affairs by molding public opinion along lines which by our knowledge and experience we know will benefit the people as a whole. You cannot be prosperous unless your community is prosperous and therefore you must be willing to give of yourself to help make your community prosperous. The time and energy that the structural engineers have given toward the development of a uniform building code for the State of California is an example of public service which is a credit to the profession. When completed it will redound in a far-reaching manner and show that engineers are capable of subjugating their individual ideas or theories in order that the public may benefit.

Employees cannot work efficiently for their employers unless they are content in their positions. Obviously, if an employee is underpaid so that he is continually worried and waiting for pay day he cannot concentrate on his work. A kindly interest in the employees' welfare produces a loyalty without which no organization can function.

We are all proud of our profession and if we wish to improve its ethical standing in society we must take a personal interest in the younger men entering the profession by encouraging them to improve themselves and to conduct themselves in an ethical manner.

No matter what standard of service is set up or how excellent our objects may be or how ideal our code of ethics may be—they will not admit us to public confidences unless each individual member sincerely and honestly exemplifies these precepts in his daily life.

Therefore, in conclusion let each of us make it our purpose

To consider Structural Engineering a worthy profession, affording us not merely a means of material gain and self expression, but also a distinct opportunity to serve society.

To hold that success in the profession of Structural Engineering is a worthy ambition, but to seek no success that is not founded on justice and right; and to consider that true success cannot arise from abuse of privilege, betrayal of trust, or taking unfair advantage of opportunities for gain or distinction.

To do our utmost, in cooperation with others, to raise the accepted standards of Structural Engineering.

Bar Fixtures by Mullen Mfg. Co.

H. J. BRUNNIER CONCEIVED THIS PANORAMIC PICTURE OF THE SAN FRANCISCO BAY AND SKYSCRAPERS AS A UNIQUE BACKGROUND FOR THE ENGINEERS' CLUB NEW BAR. INSTEAD OF THE CUSTOMARY MIRROR MR. BRUNNIER SUGGESTED WINDOW GLASS WITH NATURE'S OWN BACKGROUND. THE RESULT IS AS FASCINATING AS IT IS NOVEL.

Advertising

A Federal Threat

by Albert P. Lasker

WHEN, May last, I accepted your invitation I felt greatly complimented at being chosen to give my views on advertising to so important and scholarly an audience. But—two weeks ago, when my secretary came to me insisting that I prepare this address, and reminded me of the subject assigned to me, I said in amazement:

"Could I possibly have promised to speak on this subject? To wit: 'Advertising's New Place in Distribution.'"

I must have only too carelessly read the subject assigned to me, for such basic philosophy as I have cannot assign a *new* place to advertising. It either has its old place, shifted from time to time by changing conditions through added experience, or to me it has no place. And so I shall proceed to speak not on but against my subject.

The title "Advertising's New Place in Distribution" implies endorsement of the grave blanket indictment which has been brought against advertising for a considerable period of time by certain outstanding groups of intellectuals and social workers representing a certain social philosophy.

A paper read before the Advertising Club of America and broadcast over NBC blue network September 25.

View to the Future

To me, it seems that the view of each man as to the future place of advertising depends upon that man's social philosophy as a whole.

If I am to discuss advertising, I must discuss it as a part of our social system, and not as a thing to itself.

If my basic views on advertising are wrong, it must be because my basic philosophy on social economics is wrong.

America divides largely into three groups —those who are known as "leftists," who believe not only in a new deal, but in a *super* new deal.

Another group is a diminishing die-hard "rightest" group, who feel that the old system was practically perfect and unchanging.

There is a vast middle group, of whom I am one, who believe that our forefathers devised a system which can well serve America through the ages, a system which, as the country and the people developed, has been subject to constant change but with *fundamental* concept unchanged.

Granting always that no form of government is worth maintaining that does not put human welfare as its one final objective, those of my group feel that the only way here and now to insure this is by the preservation of individual opportunity under the private profit system. This does not imply

that grave abuses should not have salutory correction.

Our group recognizes that business as a whole cannot be freed entirely of regulation by government for the protection of society, but we hold for as little government interference as possible in the occupation of the individual to accomplish this. Such is *our* philosophy.

Would Be No Advertising

But, if instead we adopt the New Deal philosophy and carry it to its ultimate conclusion (as expressed in the Tugwell Bill) there would, to my mind, really be no advertising at all in the true sense of advertising, and, therefore, there would be no purpose in discussing "Advertising's New Place in Distribution."

I mention the Tugwell Bill, even though it did not become law, because it is the one bill under the New Deal which was specifically intended to control the business of advertising.

Many well meaning people read this bill and favored it because it seemed apparently to aim at some worthy reforms, but I can assure you, as one forty years in advertising, that every newspaper man and every magazine publisher, and every advertiser in the United States knew that as a practical fact, putting theories aside, that the Tugwell Bill, as originally proposed, would defeat the very purposes which these well meaning people read into it. I refer you to the Congressional hearings.

The concept of advertising which we have known is this: Each manufacturer has the right to project his wares, through publicity, in the hope that the total desire he thus creates will translate itself into a consumption which will pay the expense of advertising and add to his profits.

Profits Fundamental

I don't know of any advertiser whom I have served through the years who went into an advertising campaign primarily because he felt impelled to render a social service. On this I want to be candid and emphatic. His fundamental thought was that he make a profit.

But I can assure you that time without number I have seen advertisers glow with the thought that as a secondary result of their effort, their advertising in increasing demand for a worthy article was rendering a true social service.

In fact, though he advertised his wares with the profit motive as the accentuating force, I know no really sound advertiser who did not realize that if his wares did not perform a service, he would fail to get the repeat sales without which, over a long period of time, there is no chance to make a profit in a legitimate enterprise.

Of course, no one who is discussing the subject with frankness, would undertake to deny that in the course of the years there have been advertised to the American public many articles the merits of which have been misrepresented, or which did not perform an anywise needed social service. But in comparison to the total number of advertisers these are the exception and not the rule, and they have diminished constantly with the years.

However, whenever the subject of advertising is being denounced, these exceptions are cited. The whole picture of advertising is thus distorted by a false emphasis: the legitimate operations of thousands upon thousands of earnest advertisers are thereby beclouded.

Don't Burn the Barn

Of course there have been fakers and frauds in advertising just as there have been fakers and frauds in the sciences, in medicine, in law, in politics, but we do not condemn all these professions because of the small minority of fakers and frauds. We organize within and without the profession or craft to regulate and eliminate them. *We do not burn down the barn to get rid of the rats.*

Most of the intellectuals who have propagandized in opposition to advertising as a whole, seem to me, to premise their conclusions on this thesis:—since most advertisers are frauds, and successful frauds, the public must be cmposed largely of morons. Unlike "Honest Abe," they seem to believe all, or nearly all of the consumers can be fooled all the time. *Hence*, they seem to conclude as a substitute for free advertising the Government should constantly and vigilantly step in between the advertiser and the public.

We, i.e., you and I as taxpayers, publish in Washington a bi-weekly periodical called "The Consumer's Guide." This is issued by the Consumers' Counsel of the Agricultural Adjustment Administration of the Department of Agriculture. It is widely circulated among consumer groups, women's clubs, teachers of home economics, etc. I do not challenge the technical accuracy of this work. Furthermore it has a social value.

However, to my mind, it goes far, far into the field of government guidance (if not actual government control) when it advocates the setting up of Government standards by which the consumer should purchase; this because of the fact that the average consumer would not understand a Government standard if he bumped into it in broad daylight. I beseech you, for example, to read the Government specifications for soap. Get a copy of them, take them with you shopping. Try anywhere to buy a soap to fit the specifications. Try to find a sales clerk who could read these specifications any better than you. It is not only an interesting but an illuminating experiment.

Consumer Always Votes

In a sense, the consumer has ever been a *voter* on the articles he wanted to buy just as he is a voter on candidates for public office.

If we accept the proposals of the anti-advertising "reformers," we might as well accept the thesis that there has to be a Bureau of Standards to save the voter from himself by guiding him as to the merits of all the various candidates for political office.

We might amuse ourselves by visioning a bureau that had authority, by law, to grade the various candidates and to deny the candidates the right to any appeal or to the projection of any philosophy not laid down by the bureau.

And carrying the thought further, if there be applied to political propaganda what was proposed to be applied to commercial advertising in the Tugwell Bill, the political candidate might finally have a right only to put in his literature his name, his age, his weight, the color of his hair, the school at which he was educated, and possibly (but of this I am not at all certain) a little sketch of his ancestry.

I am not exaggerating when I state in its ultimate working out this is exactly what the Tugwell Bill proposed to do for advertising.

Thus, at every turn, you see we can only discuss this subject of "Advertising's Place in Current Distribution" according to our philosophy as to the relation of Government to the individual.

Would Cease to Exist

If the bureaus in Washington and their allies, both governmental and privately organized throughout the country, should perchance capture the consumers' vote with their standards and gradings, then the private competitive system, at least so far as trademarked articles go, will have been, by and large, made impossible. Therefore, even if not controlled or stifled by legislation, advertising, as we know it will for the most part have ceased to exist. Why?

Because the logical result of the standardization in manufacture and claims thus brought about, to my mind, must be ultimately regimentation of the producer and regimentation of the consumer. This regimentation would come about, normally, because in its final working out it would be almost impossible for the advertising to make the slightest emotional appeal. Dry standards would govern. Advertising could be no more than *an index*, or like a classified telephone book.

Thus, again, we are confronted by the question: Which philosophy shall we adopt?

The two philosophies, so far as concerns advertising, come to the parting of the ways when we seek the answers to these questions:

1. Is the "emotional appeal" a legitimate weapon in salesmanship (and of social value) or is a bare index of facts a better, *safer* guide for consumers?

2. Is the increased consumption of advertised articles desirable or harmful? Or is the so-called increase in consumption merely a diversion of consumption otherwise directed elsewhere?

3. Does advertising reduce selling costs; hence of ultimate benefit to the consumer? Or is it primarily a means of befuddling the consumer so that he readily pays an excessive price?

Dramatizing the Drab

What I mean by the emotional appeal is not the method of *inventing* the drama of fiction, but of dramatizing a fact, of putting in picture, or simile, enticingly and dramatically, what otherwise would be a dry, dreary, drab index.

Advertising is salesmanship in print. Certainly we would not ask of the spoken salesman that he confine himself merely to the dry representation of specifications and statistics, which in the end, technically neither he nor the consumer might understand.

Neither would we ask the politician in seeking the public ear, to omit the emotional appeal. Excellent men have failed to win or to continue to hold public office because they syllogized instead

of appealing to the emotions. It was their loss; and *ours*, as voters.

I, for one, believe that advertising, by appealing to human emotions, has largely increased the total desire of the American people for myriad products, thus has increased the will to work that desire might be satisfied. Even those outstanding inventions — motor car and radio — to my mind would never have achieved their great volume without advertising. Certainly none of us but will agree that Henry Ford is one of the outstanding geniuses under the modern industrial system. Yet he has felt it necessary to advertise, to stimulate the sales of his car.

Stimulates All Motor Sales

The motor car manufacturers, as a whole, recognize the fact that while an important part of their advertising was and is to get preference for their particular product, if that factor did not exist at all the total of their advertising would be justified in the added stimulation created among the people to own a motor car.

According to some older teachers of economic philosophy, this idea of "stimulating consumption" is all fallacy. But today, there is at least one group which must accept my faith in the value of stimulating consumption. That is the united group of *New* Dealers who so emphatically give, as one of the causes of our depression, the alleged evil of over-production.

In one sense at least the social value of stimulating consumption will be denied by no thinker, no matter of what school: Whenever consumption is stimulated for a superior article, especially when the use of that article tends to raise the standard of living, the stimulus is worth many times its cost. I'll illustrate later by example.

Advertising Creates Desire

One of our American traits, which is particularly attributable to advertising's influence in keeping the better of things of life before us, is our desire to get ahead.

We are enormously curious about the ways other people live, particularly if they belong to our own, or a higher income level, and ordinarily we do not find out how other people live so that we may live differently, but so that we may live in exactly the same way.

In countries where the standards of living do not change, consumers let their habits dictate their purchases. Witness Mexico, where the peon works 6 days a week, if he gets $1 a day; and works only three days a week if his wages are doubled. This holds true also in an industrialized country where membership in a fixed social class is taken for granted. The fixed social habits of the various classes in those countries influence the market to a degree that is noticeable even to the most superficial traveler.

How different is America! Largely through advertising we have created *desire*. This desire has translated itself into increased employment, based, mind you, on the common man's stimulated desire for higher standards of living.

Excessive Profits

Now as to the price question.

True there are and have been some advertised articles that have been sold at excessive profit.

But these usually have been near luxury articles comparatively short lived—lilies of the field. In general, competition has been a salutary corrective. Competing articles—advertised or unadvertised—in due time always displaced the profiteer and exploiter.

I maintain such overpriced advertised articles are insignificant in number, compared to the whole.

The great body of advertised articles, under wise management, without thought of altruism, have reduced selling price or improved quality or both, as public acceptance has increased volume.

Let me illustrate my contention in the preceding paragraphs. I regret time permits only the fewest fact stories.

Cotton Substitute

During the war the Germans had great difficulty in getting ample cotton and were driven to substitutes. Among these was a very efficient substitute made of pulp wood which was used for surgical dressings.

When we entered the war our government subsidized the building of large plants for the making of this surgical substitute dressing.

With the war ended the output of these plants was no longer needed. An ingenious, venturesome manufacturer, with one such plant on his hands, perfected his product for use by women. Instinctively an advertiser, he coined a good name —Kotex.

It took vision, capital, and courage to educate the women nationwide on the great benefits to be derived from this new sanitary hygienic absorbent and to give them a knowledge on this im-

portant subject which millions heretofore had been lacking.

Large capital expenditures had to be made, large sums of money advanced in spoken and printed salesmanship.

Advertising Reduces Price

The product first appeared at 65c. In time, through the education given to women by advertising (not by indexing the advantage of Kotex but by emotional appeals) the volume grew so that today Kotex is vended at 20c, list price.

Furthermore, since the product has been constantly improved through scientific experiment, a much better article is offered the public at less than one third the original price.

The manufacturer knew that if he retained too much profit to himself, two things would happen: 1. His volume could not grow. 2. He would be holding up an umbrella under which others could take a big share of the market from him at a lower price.

I recite the Kotex incident because it vividly shows what I could demonstrate with scores of other cases with which I have been personally connected, how manufacturers have devised an article for which there was a real social need, educated the public on the use of that article and finally, had increased consumption of this article and thereby production of all materials used in its manufacture—thereupon the lower price followed naturally.

No Soup in Cans, Then

I shall now give a different type of case: where service was rendered by increasing the quality of value rather than by mere price reductions.

Some 40 years ago there was no such thing as a soup in cans. Today, largely through the public's education, via advertisng, the total consumption of soup in cans runs into billions. It has been jestingly said the American housewife keeps house with a can opener, but she has thus been freed for opportunity for leisure to use as she may will.

In 1929 the Campbell Soup Company stated that 30 years before their output was 500,000 cans for the entire year, and in 1929 it was 18 million cans a week. In 1898 the sales expense was 7½% and for advertising 14% of the selling price. In 1929 the cost for selling was 2½% and for advertising less than 3%, making a total selling cost of 5½% or 2% less than the cost for salesmen alone in 1898.

I remember distinctly one day when the founder of the Campbell Soup Company, never a client of mine, told me that a certain type of soup had grown four times in volume in the 12 months preceding, and with great amusement showed me a score of letters from his salesmen saying they could not understand the great growth in this particular type.

Tells Reason

He then told me the reason therefore.

He said "When I founded this business I made up my mind that at no time would I be willing to make over a certain infinitesimal fraction of a cent profit on a can of soup; that when my volume had grown so that I was gaining more profit, without saying anything to anyone, would immediately put that added profit into making my soup better. For there is no limit to what you can spend on soup. It is merely a question of how much money you have to spend. The more money you have the more vegetable and meat you can put in, and the more you put in the more nourishing the soup. So that I made it a rule every six months to take what added profit there had come through our added volume and invest it in the improvement of our soup. Thus our volume has grown.

Profits into the Soup

"A year ago I determined to put our current added per can profit into one particular type of soup. I said nothing to anyone. The greatest testimonial to the rightness of my policy is these mystified letters from my own sales force, asking why this soup has increased fourfold in twelve months."

Another case:

I have been connected for 20 years with one of the largest selling brands of toothpaste. We started our advertising about the time America entered the World War. There was very little tooth paste advertising then. If I remember correctly, in the Expeditionary Army only one in four had ever used a toothbrush. This statement is startling but I think it is within the fact.

We projected the use of toothpaste through the expenditure of millions of dollars in advertising and kept proclaiming to the American public, "Clean your teeth twice a day—see your dentist twice a year." The use of the toothbrush in the United States increased within a few years manifold. Oral hygiene made overwhelming strides

. . . competitors in turn increased their advertising, all directed at making America oral hygiene conscious.

Bureaus Would Fail

All the bureaucratic education which might come out of Washington, at the taxpayers' expense, through the dry routine methods there employed could not have brought America to near the recognition of the importance of oral hygiene to human life, human health, and human happiness as a result of health, as the advertising by toothpaste manufacturers accomplished.

As to the price: At all times the consumer has had his choice of toothpastes, at all prices. He could buy the unadvertised as well as the advertised brand. In fact every chain store he enters attempts to induce him to buy their unadvertised brand at lower cost. He would not be trading with the chain store if he did not have confidence in them. If he voluntarily chooses to continue a higher priced article, is it not because he feels a satisfaction and a security in its use that means much to him?

Dr. Chas. H. Mayo, one of the two great Doctors Mayo, whom President Roosevelt has just honored for their outstanding contributions to mankind, in an address in San Francisco to fellow medical men, as quoted in "The Chronicle' of that city, said:

> "The modern dentist is doing a great work in pointing out that more than twenty ailments show themselves in the mouth. Amos 'n' Andy are doing more than anyone else in the world to get people to care for their teeth."

The Farmer Advertises

Let us consider a product advertised by the Farmer—Sunkist oranges and lemons.

I remember vividly my first contact with the California Fruit Growers Exchange, over thirty years ago. The vice president in charge of traffic of the great Southern Pacific Railroad came into our office and said that the railroad was interested in seeing the demand for oranges and lemons increased, so that they could get the added tonnage. Surely here was an impulse for creating both prosperity and higher standards of living, that I fear could never have been stimulated if private initiative were put in chains.

This railroad official introduced us to the head of the newly formed Citrus Cooperative, composed of farmers in Southern California. An original venture of $3,000 in Iowa—a test campaign—marked the entrance of Sunkist oranges into advertising. That was 27 years ago.

The per capita consumption of oranges has increased from 32 oranges a year then to 72 oranges a year now. A new generation in America has been reared—fed on orange juice from infancy.

New Hired Man

Advertising has become the orange farmers' new hired man. By stimulating sales it enabled them to change red ink into profits. It resulted in a normal prosperity in California that has few parallels. The California Fruit Growers Exchange, which markets and advertises Sunkist oranges, is a cooperative, composed entirely of farmers who merchandise their own wares. Ask any of them as to the vital part advertising has played in the prosperity of themselves and their families—what it has done through increasing demand for their product to enable them to become greater consumers of the products of others.

An epic might be written on the added wealth that was brought to Southern California not only annually, but in the values of its lands, through the acceptance by the consuming public of the claims and representations of Sunkist advertising.

But what of the consumer?

Florida Rides Along

While Sunkist orange advertising attempted incidentally to bring about a preference for Sunkist oranges, this publicity has at all times devoted the major share of its expenditure to propagandizing through emotional appeals the value of oranges as such. So the consumer ate more oranges and fed orange juice to his children because through advertising he learned that oranges were something more than a delicious fruit to be found in the Christmas stocking or the 4th of July picnic. He learned of their health properties—their vitamins, their minerals and their value in offsetting acidosis and their contribution to sound teeth. The Florida orange growers will bear witness that their consumption largely increased through the result of California advertising.

Did time permit I might spend days giving similar illustrations of the history, the function and the contribution of advertised articles.

I picked these few cases at random merely to sketch the facts of advertising accomplishments as I know them, in order that I may thus confirm through reality the operations of the philosophy which I have towards this subject.

Higher Standard of Living

I maintain that advertising has stimulated production by stimulating consumption. I maintain it has done it on so vast a scale as to bring about a higher standard of living among the American people than would have possibly existed without advertising under any system.

Witness: that in those countries where the standards of living are highest the proportion of advertising is greatest. It is important to note that as the standard of living goes down the standard of advertising goes down. This is universal. Perhaps you will answer that I put the cart before the horse. Then at least, you will concede that advertising is in fact a cause and not merely the result of these better standards of living.

Advertising is at its lowest in India and China. It is at its highest in the United States and Great Britain, just as it is higher in Great Britain and its colonies than it is in lower living standard countries.

And when advertising stimulates production of the article advertised it stimulates in large degree the velocity of business as a whole.

A Real Free Press

Now let us view our subject from one of its broadest aspects:

Surely no country in the world can boast of a press, both local and national, such as we have in America. The type of American newspaper and magazine that we know is a free press. Through the *multiplicity* of advertising the press in our generation has become increasingly independent. For, as advertisers *multiply* each individual advertiser counts for less and less. No advertiser today can influence the editor's fundamental policies. Any editor who might be thus influenced has a publication without influence.

No more vicious calumny has ever been put forth than the suspicion that the press, in any major or important way can be influenced editorially by its advertising patrons.

In my own experience I personally have rarely asked a publisher for favor editorially because I felt the publisher would automatically conclude that I was trying to bring the pressure of my advertising patronage on him, and this he would resent and proceed to show his independence.

Publisher Unimpressed

Furthermore, every publisher knows that the advertiser would not continue to use his paper unless a profit came to him, and so my ability, and that of other advertisers, to influence any valuable publisher is by and large a myth. Because, he knows as well as we, he will only have our patronage so long as sales results justify it.

I speak fact, not fiction. I speak from experience.

I state here that a free press has been able to maintain itself in its freedom from all outside influences, including that of the individual advertiser, largely through total volume of the advertising patronage which it created and deserved.

Limit the freedom of advertising, as it would be limited under the proposals of its adversaries, and we would do away with a large share of the American press. It would die in proportion as advertising would die. The first to go would be the country newspaper, which is the very backbone of our American democratic freedom.

Would Cripple Press

And if these newspapers would not literally die, the very paucity of their advertising patronage would make them editorially subservient to the occasional patron. Of this there is ample evidence in those foreign countries in which advertising in the modern sense is still in its infancy. There the press is largely *prostituted* by its few powerful patrons.

All that holds true of the effect of free advertising on the life of the press, has equal validity in relation to that new and vast instrument of public information—the radio.

Hear ye! End free advertising and you will largely end a free press such as we have known. Here, again, the two philosophies come to clash. You and I must choose.

"Advertising's New Place in Distribution?" It is all according to your philosophy. If you believe by peaceful revolution our system should be changed into one of regimentation, or near regimentation, you may nor may not accept a new thesis on advertising.

I, for one, feel that if we keep adding responsibilities and authority to bureaucracy, from the very nature of bureaucracy, no matter how honest or high minded, we finally place the dead hand of government on private initiative.

"Poison Ivy in Industry"

For some years I was in the government service as Chairman of the United States Shipping Board. And from my experience there I stated here in Boston, at that time, before your famous Chamber of Commerce, that I had found "Gov-

ernment in business to be poison ivy in the garden of industry."

I do not mean by this to reject that there is no place for government beside business and as a brake for the correction of evils. But I do say, to repeat myself, that we do not burn down the barn to rid ourselves of the rats.

It is not only the length of a step that counts, but it is the direction. So far as advertising is concerned those who oppose it as it existed propose as a substitute such action which finally must result in the regimentation or near regimentation of producer and consumer alike. There will be no other alternative.

I merely wish to raise my voice in the hope that we will not reject our past just because it has been our past. We in advertising, as in other vocations and professions in America, recognize the evils that any systems and any times will finally accumulate. We militantly desire to correct those evils, while maintaining the best in the system which has been handed down to us rather than throwing the system away which has served us well.

No New Place

I can see no new place for Advertising in distribution. Either in general principles, it must hold its old place changed under changing conditions, with abuses corrected, or its place will be in the great nowhere.

That vital basic factor of all advertising, the free will response on the part of those addressed cannot live under the limitaions of regimentation. The freedom of advertising must live in order that we may have the freedom of the consumer—and, yes, perchance, if I am right, the very freedom of the press and of the air.

I, for one, am in no wise discouraged. I am glad the conflicting views of the two philosophies are now being brought boldly into the open. The debate may be long, the decision delayed. If our debate on all the subjects which are pressing us—advertising included—is democratically continued, it is my conviction that there will emerge a better, a stronger, a sounder America—undaunted, imperishable!

SCHOOL BONDS DEFEATED

Bonds in excess of $2,000,000 for proposed new school work in the city of Berkeley were defeated in the recent state election.

SHOULD ARCHITECTS ADVERTISE?

In these times of keen competition and scarcity of jobs, architects are discussing seriously the question of advertising.

The following paper on "Corporated Propaganda," by Frederic E. Towndrow, a member of the Royal Institute of British Architects, will be found pertinent and more or less enlightening:

"It might be argued by some that propaganda in any form—even corporate propaganda—is inconsistent with professional dignity, and I would like to deal first with this point of view. Now in this question we must consider what is our objective as architects. Is it to uphold a certain dignity for itself alone? Or is there something beyond that? It will be seen immediately that we cannot uphold a dignity for itself alone. A race of dignified architects who did not build anything would be an absurdity, for they would not, in fact, be architects. Whichever way we put it, whether we say we wish to increase the public interest in architecture, or wish to increase the prestige of architects or our art, it comes to the same thing; our real objective is: more work; for if we do not work, we do not exist as architects; consequently, dignity, prestige and the very art of architecture also fail to exist. We are only concerned for our prestige in so far as it *assists* the public confidence in our work; so the vital test is not the quantity of prestige which the public gives us, but the quantity of work it gives us; *for the latter necessarily includes the former, and it includes it to the right and effective degree.* It follows, therefore, that if we actually obtain a larger amount of work—*by any methods satisfactory to the public*—we do, *ipso facto*, obtain a larger amount of prestige, for the giving of work, *without any doubt*, implies confidence. The actual commission is the vital test of confidence; thus we should concentrate to that end, and subordinate everything else in proportion to it. Let us get our minds clear on this point.

Humbug and Apologetics

"Of course, there are many architects who strangely pretend that they do not need work, that they are oblivious of all remuneration, that they live on air and art and only descend to work at the urgent request of a client. This sort of humbug is very curious and very prevalent. Yet, apart from those who carry this affectation of treating architecture as a gentlemanly pastime, there is within many of us an apologetic streak which causes us to be backward and retiring; a

little ashamed of our work; as if it were not a normal and necessary activity carried on for an honest livelihood. In certain cases this may be just modesty or an inferiority complex, but the root cause, as I believe, lies in the fact that we are dealing for the most with a public that has no knowledge of what we are or what we do, there being no professional propaganda to support us by overcoming their ignorance or prejudice. And this ignorance does not apply to unlearned or poor people, but to all classes of British society, including the wealthy and the educated. They simply do not know; and who is to tell them? If we do not do it, no one else will. So *we* must do it, and do it properly, through some co-ordinated scheme of corporate propaganda.

Advertising in the Press

"Let us first consider advertising in the newspapers. Under their professional code, members of the R.I.B.A. may not privately advertise in the Press. This is as it should be, for newspaper advertising is very costly and very uncertain in its results, unless undertaken on a fairly large scale over a long period. In this it is obvious that the well-to-do architect would be able to 'splash it' in half columns for the whole of the year, while the poor struggling practitioner would be lucky if he could afford half an inch now and again.

"But this does not apply to corporate advertising, either for the profession as a whole or for local sections of it. Why should not the R.I.B.A. for instance keep well-worded, seemly announcements running in our best newspapers, pointing out what the R.I.B.A. is, what it stands for and what constitute the qualifications of its members? The Stock Exchange does this in the public Press, and so does The American Institute of Architects. Doctors and lawyers would do the same if they were not so handsomely protected. And with us this has become acutely necessary, as few people recognize that the affix of the R.I.B.A. after a man's name is any different from a dozen other affixes which may be had by merely paying a subscription. In fact, I have known cases where hard-headed committees of experienced business men have chosen an architect merely on the number of letters he puts after his name, when not even one of those groups of letters was worth tuppence.

Against Newspaper Advertising

"The arguments against collective newspaper advertising are (*a*) its cost; (*b*) the competition it would arouse in rival organizations and speculative builders; (*c*) its loss of dignity.

"I will deal with these. (*a*) Admittedly the cost of anything like an extensive newspaper campaign would be prohibitive. But there is a certain degree in these things, and a total sum of say, £2,000 per annum spent wisely on all the activities of propaganda (including exhibitions) would not be disproportionate under modern conditions and would, I think, bring considerable benefits to the profession. And as to point (*b*), obviously the newspaper advertising should be of a kind that simply draws attention in a seemly fashion to the very existence of the R.I.B.A. [like the A.I.A. here] with the qualified architect as distinct from the unqualified one. This would not arouse competitive action on the part of unqualified architects, for in the first place they have no organization or standards of examination, and in the second place many of them advertise as it is. Nor would it arouse any competition on the part of speculative builders, *because they already advertise up to the hilt.* They could not advertise much more, owing to the limits of their own pockets or, in fact, the limits of the newspapers. We have nothing to fear from them, for already they are anxious to claim that their houses are designed by 'architects,' and what would happen is that as soon as they saw that the R.I.B.A. qualification was beginning to be appreciated they would employ or consult a *qualified* R.I.B.A. member (as the more enlightened of them do already). The speculative builder is not opposed to the architect. He will be only too willing to use his services whenever he sees that the purchasers of ready-built houses are beginning to demand decent design. As to point (*c*): there would be no loss of dignity, rather an enhancement of it, because the busy world is accustomed to being told what it ought to know through the public press. One does not think any less of an organization for saying clearly what it stands for. In fact, one admires it for being so open about it. The only thing that one really despises is professional mystery and humbug. In any case, any announcement that we would make would appear quite gentle and refined as compared with the ordinary noisy guns of advertising. *It would be almost impossible, whatever we did, to shock the public;* they take a good deal of shocking; and if we offended one or two of the 'old stagers' in the profession that would not matter, for it is the public we want to get at, not the 'old stagers'."

ARCHITECT OR ENGINEER—WHICH?

IN examining their respective NRA Codes, it will be found that very little distinction is made, so far as functions are concerned, between architects and engineers. Perhaps but little difference should exist, if any. The word "aesthetics" seems to cover the principal distinction.

During the later period of the development of architecture as an independent profession, architects have been inclined to lean very heavily on this distinction. The question arises: Has this been entirely fortunate for the architect? Truly, in considering architecture as the "art and science of building," due consideration should be given to the fine arts involved, as well as the sciences. Possibly insufficient care has been taken lest too much emphasis be placed on the fine arts to the end that control is lost of the sciences, which are quite as important to the layman, possibly more so.

The sciences involved in the design and construction of buildings and their equipment have been developed, expanded and refined to the point that most of them have taken on the form of independent specialties. Thus, the architect who once designed an open fireplace connected with a chimney to perform the function of heating and ventilating, now employes a heating and ventilating engineer. It need not be pointed out in detail how the famous work of Architect Chick Sale has been almost entirely superseded by the plumbing and sanitary engineer. In the days of gas light, the science of illumination was handled efficiently by the architect. In our day, at least two more specialists have developed—the electrical and illuminating engineer.

Other illustrations of once direct functions of the architect now gravitated into another field called "engineering" occur. Assuming the expertness of the architect in all these specialties, which is super-human, no man could function in all and carry on the multifarious and increasing duties involved in the design of modern buildings. Hence it has become the custom for the architect handling large projects regularly to include within his organization many of the more important of these specialists. The small architect, however, cannot afford to do so, and therefore there has grown up a number of independent specialists whose services are available when needed by architects. They are also equally available to anyone else who may have use for such service and who may be willing to pay for it. They are called engineers.

To illustrate, an electrical engineer will design the wiring scheme and other electrical details required for, let us say, a house, for a fee paid by the architect who employs him. Also, he will design the electrical equipment for the owner of a factory for a fee paid him direct by the owner. He will also design an electric power plant, including the building, hiring and paying an architect, or perhaps only architectural draftsman under his own direction. His fee to the owner covers the entire job.

The question then arises, is such an expert functioning as an engineer, or as an architect? Who is responsible for the custom of calling a person an "engineer" who undoubtedly is a masterbuilder, who designs, writes specifications, makes contracts, supervises construction, for—let us say—an electric power house? Is not such a person truly an architect? If so, why not admit the truth? Is it not because architects have reserved that word "architect" to describe only those masterbuilders who deal with architecture as a fine art and who are willing to delegate to others the sciences involved, as long as those scientific specialists do not use the charmed word?

Architects had better look out. The tail has been known to wag the dog.—*Victor a Matteson in Monthly Bulletin, Illinois Society of Architects.*

BOOK REVIEW

AMERICAN COUNTRY HOUSES OF TODAY, edited by Lewis A. Coffin, A.I.A.; Published by the Architectural Book Publishing Co., 108 West 46th Street, New York City, N.Y. $8.00 net.

This book should prove a valuable addition to the book shelves of the "small house" architect, and to the layman interested in, and appreciative of, the American small house.

Splendidly illustrated and replete with plans of each house shown, it's geographical range is extensive, with houses and details from the Atlantic to the Pacific Coast.

THE BONDING OF BRICKWORK, by William Frost, F.I.S.E.; University Press, Cambridge, England. (no price given).

A neat little handbook, excellently put together, and containing precise and understandable information relative to its subject matter.

This volume should be of constant use, and a valuable source of data to architects, as well as to brick and plaster contractors.

« « « « With the Architects » » » »

TWO SCHOOL BUILDINGS

John I. Easterly, 302 Grant Street, Healdsburg, is completing drawings for a one-story steel frame and reinforced concrete gymnasium for the Healdsburg High School District. It will cost $60,000. Mr. Easterly is also completing plans for a one-story frame and stucco grammar school building at Healdsburg to cost $75,000. He has recently awarded a contract for a new grammar school building at Lower Lake, Lake County, at an approximate cost of $10,000.

OAKLAND COURT HOUSE

The Alameda County Supervisors are advertising for bids to be opened December 12th for construction of a twelve-story steel frame and reinforced concrete court house building and jail. The plans were prepared by a board of consulting architects, comprising W. G. Corlett, W. E. Schirmer, H. A. Minton, Carl Werner and James W. Plachek. The approximate cost of the building is $1,800,000.

RESIDENCE WORK

The office of Clarence A. Tantau, 210 Post Street, San Francisco, is feeling the effect of the Federal Housing Act and several residence projects are in the making while working drawings have been completed for one dwelling in the vicinity of Atherton, San Mateo County.

VALLEJO STREET RESIDENCE

Plans have been completed by G. W. Travis, architect, 251 Kearny Street, San Francisco, for a two-story frame and stucco dwelling to be built on Vallejo Street, near Baker, San Francisco, for Dr. Ralph E. Scovel.

HOSPITAL DORMITORY

Bids are being advertised by the Santa Clara County Board of Supervisors for the construction of a $7500 dormitory at the County Almshouse, near Milpitas. The plans were prepared by Charles S. McKenzie, of San Jose. The bids are to be opened November 26th.

ARCHITECTURAL EXAMINATION

The next examinations for a certificate to practice architecture in the State of California will be held in Berkeley, December 17, 18, 19 and 20, by the State Board of Architecture Examiners, Northern District.

Applicants must file notice of their intention to take the examination and must pay the $15 filing fee not later than November 30. Applications should be made at the office of the board, 450 McAllister Street, Room 503, San Francisco.

The board will permit 12 hours for completion of the design problem on the first day of the examination. The time heretofore has been nine hours. A four-hour examination in the history and theory of architecture is scheduled the second day. Two examinations will be held on the third day, four hours each being devoted to (a) structural design and (b) strength of materials.

The fourth day examinations cover mechanical engineering and architecture practice.

TO DESIGN DEPARTMENT STORE

A commission to design a large department store at Shanghai, China, has been given John Graham, architect with offices in the Dexter Horton Building, Seattle. Mr. Graham only recently returned from the Orient where he arranged to establish a branch office at Shanghai. Later he will return to supervise the construction of the store building for the Sun Company, Ltd. The structure will be eight stories in height and cover the larger part of a modern city block. The estimated cost is $2,000,000.

ENGINEERS BUSY

Ellison & Russell, Pacific Building, San Francisco, have completed drawings for a four-story mill type addition to the building owned by the San Francisco Warehouse Company on Brannan Street, between Second and Third Streets, San Francisco. The estimated cost is $25,000. The same firm of engineers is busy on plans for a cannery in Stockton and they have completed drawings for a two-story cannery in Santa Cruz for the A. K. Salz Company.

THE SANTA CLARA POSTOFFICE

Editor THE ARCHITECT AND ENGINEER,

Dear Sir:—

In your last very interesting number you "discredited" me with being the architect of the proposed Santa Clara Postoffice. In justice to my reputation I think you should correct this, for if the present plans are carried out, it might do me some damage. This job was originally awarded to me and was to have cost $75,000. Later the cost was reduced to $40,500, and I was notified that I was out and that the work would be taken over by a Federal Bureau. By mistake they sent me a set of plans, and if the worst office boy I ever had could not have done better, I would have shot him at sunrise or before. I understand that the community is much upset and that bids have been rejected. Look on page 66 of Saturday Evening Post—October 20—and see short article describing accurately the new deal.

Very truly yours,

CLARENCE R. WARD, Architect.

PERSONAL

WILLIAM G. CHESTER, formerly of Bellingham, but now employed by the New York City Zoning Commission, has been notified that he has won one of the five medals given by Columbia University, New York, for proposed design of new university campus and building plans.

LEWIS M. CRAWFORD, architect of Santa Maria, recently underwent an operation for appendicitis. He is much improved.

JOHN W. MALONEY, architect, with studio in the Larson Building, Yakima, is building for himself a $10,000 home on Linden Way, that city.

A. M. NISHKIAN, associated with L. H. Nishkian, structural engineer, is quite a football fan as evidenced by the fact that he won $27 from the *Examiner* for guessing correctly the winners of 18 out of 20 games played the week of November 20.

ALBERT J. ROUSH

Albert J. Roush, architect in Seattle since 1919, died Friday, Sept. 21, at his home in Beaux Arts Village following a six months' illness. For some years he was a member of the firm of Baker, Vogel and Roush, with office in the Smith Tower, Seattle. He was 50 years of age, a native of Ohio and a graduate of the University of Ohio.

STORE BUILDINGS

A one-story brick store building is to be erected by the O'Shaughnessy Estate in Mill Valley from plans by Kent & Hass, architects, Underwood Building, San Francisco.

Plans for remodeling a store building at Washington Avenue and Ward St., San Leandro, have been drawn by Messrs. Williams & Wastell, of Oakland.

60 FARM HOUSES

Ray V. Weatherby, architect of Longview, Washington, has completed the plans for 60 farm houses with outbuildings for the Federal Subsistence Homestead being developed at Longview under the management of A. E. West. The new deal experiment is located on a 141-acre tract to the west of the model city.

MARINA RESIDENCE

Preliminary sketches have been prepared by Louis M. Upton, 110 Sutter Street, San Francisco, for a $10,000 dwelling in the Marina District, San Francisco. Mr. Upton has also several other building projects which are expected to mature shortly.

DALY CITY SCHOOLS

Bonds have been voted for three new school buildings at Daly City to cost $105,000 and plans for the structures are being prepared in the office of Albert F. Roller, architect, Crocker-First National Bank Building, San Francisco.

ALBANY THEATER

William I. Garren, 233 Post Street, San Francisco, has applied for a building permit to construct a motion picture theater at Solano and Kaines Avenues, Albany. It will have a seating capacity of 600. A feature will be a soundproof glass room for infants.

PALO ALTO BUILDING

Dr. Granville Wood of Palo Alto is the owner of a one-story reinforced concrete office building for which H. C. Collins, architect, has prepared plans. The structure is to cost $12,000, and will face El Camino Real, in the University City.

A. F. ROLLER APPOINTED

Albert F. Roller of San Francisco has been commissioned to prepare plans for the new Santa Cruz county court house, jail and office building group.

REGIONAL PLANNING CONFERENCE

The Pacific Northwest Regional Planning Commission, composed of representatives of the state planning boards of Washington, Oregon, Idaho and Montana, announces the second Pacific Northwest Regional Planning Conference, to be held in Seattle, Washington, December 12, 13 and 14. This meeting will also constitute a planning conference for the Columbia Basin, which forms a large part of the four states.

The purposes of the conference are:

1.—To receive and consider progress reports of the planning programs in the Pacific Northwest.

2.—To consider state and regional applications of the current National program for land and water utilization.

3.—To present planned uses of public works, including the large power projects, in relationship to other factors of social-economic advancement.

4.—To assemble those persons who are qualified to deal authoritatively with appraisal and use of natural resources with reference to establishment of the human values that are of chief concern in a recovery program.

5.—The planning and stimulation of further progress.

The conference dates are especially timely in view of the completion of preliminary inventories and reports of land and water resources and uses, on a National basis, ordered by the President, sponsored by the National Resources Board and other Federal agencies, and to be submitted to the President and to the Congress at the coming session as a basis for National policies.

Potential markets for the prospective new power output of the Pacific Northwest, and the reported new immigration movement into the region and its relations to land use and other problems, are also topics of rather pressing interest.

The program will provide for both general and detailed views of planning aims, progress, needs, methods and programs. It will provide for meetings of Federal, State and local official, technical and public groups, in consideration of national, regional, state and local planning, and in reports and discussions of both general and specific nature.

At the more general meetings speakers of wide reputation will be heard upon important and current subjects related to planning and the conservation and utilization of resources.

Divisional meetings will bring together those persons interested in the individual phases of planning and development, with regional and state advisory-technical and divisional committees, in intimate discussion of progress, needs, research, and plans, and programs for further advancement.

The divisional meetings will focus into the larger group meetings, which are designed to bring into discussion the more important divisional relations and common needs and activities.

ELECTRIC AUXILIARY HEAT

This is the season of the year when, as summer wanes and fall approaches, warm sunshiny days are apt to be ushered in and out by decidedly cooler mornings and evenings than usually prevail during the straw-hat period.

The problem of domestic comfort presents itself at this time, even if to a lesser degree than during seasons when extremes of temperature are looked for. There may be no need of calling upon the household's central heating system, but it will be found convenient to have at hand some method of tempering the atmosphere in certain parts of the home at odd times and for as long or short a time as required. Here what is termed auxiliary heat comes in.

In an electrically equipped home the portable electric heater does wonders to alleviate the temporary discomfort caused by the chill of early morning. The business man, rising at an hour when the sun has not had time to make its genial presence felt, can shave and perform his matutinal ablutions in comfort with the assistance of this contrivance which is of attractive appearance, light and easy to handle and responds instantaneously to the application of plug to socket. His toilet performed, the man of the house can carry his heater with him to the dining room and enjoy his breakfast in comfort.

Auxiliary heat is a general need in the home to supplement the main heat supply. Few homes have a central heating system reaching into every nook and cranny. Apex Manufacturing Company is turning out several types of electric heaters that are said to be giving splendid satisfaction. Not alone efficient but economical the Sandoval Sales Company of San Francisco, reports a large increase in sales of Apex heaters this year over 1934.

ARCHITECTURAL CLUB FROLIC

The San Francisco Architectural Club will hold its annual Christmas frolic at the Bal Tabarin Friday evening, December 7th. Donald Jaekle is general chairman and promises plenty of entertainment.

Chapter and Club Meetings

NORTHERN CALIFORNIA CHAPTER

The regular meeting of Northern California Chapter, A.I.A., was held at Marquard's, San Francisco, at 6:30 P.M., Tuesday, October 30, President Albert J. Evers, presiding.

The minutes of the previous meeting were approved as published.

It being the annual meeting of the Chapter, Mr. Evers delivered his presidential report of activities during the year. The members of the Chapter and the profession at large were complimented for the courage and morale which has been exhibited in carrying on while the building industry is prostrated. Through their spirit of co-operation, mutual friendship and professional integrity, it was stated, the architects have been established in higher esteem in the community. Chapter accomplishments were reviewed and concerned, chiefly, the various relief and recovery measures of the Government. In closing, he urged continued support of these measures and a progressively more active part in all of the affairs of the industry and the community.

The secretary - treasurer's report was presented and accepted, subject to the usual audit. Following its acceptance, a motion to transfer the sum of $90.00 to the educational fund was carried. It was also moved and carried that the sum of $5.00 be applied to the cost of audit.

Reports of standing committees were submitted and accepted with thanks, as follows:

Committees on practice (as amended), competitions, legislation, public information, and education.

Reports of special committees were submitted and accepted with thanks, as follows:

Committees on membership, exhibits, standard accounting, contract documents, uniform code, N.R.A. code, and historic landmarks.

Summaries of public activities of co-operating organizations in which the Chapter has participated through representatives, were accepted with thanks. These embraced the San Francisco Federation of Arts, California Roadside Council and the Producers Council.

All of the reports were very interesting and bore out by fact the earlier statement by the president of a busy and fruitful year. A number of these contained recommendations toward future policy and program which were noted, and, in instance, discussed from the floor.

The report of the committee on practice evoked special attention. It was stated therein that a plan advanced by Southern California Chapter, entitled, 'Form of Competition for the Selection of Architects for the Design of Public Buildings", had been almost wholly approved by the committee and, with some further amendment, by the board of directors.

When the plan was laid before the Chapter, however, it became the subject of intense discussion, with the result that a motion was passed, as follows:

RESOLVED, That Northern California Chapter, A.I.A., recommend to the Board of Directors of the Institute that serious study be made to develop some standard competitive method of selecting architects for buildings to be built in whole, or in part, with Federal funds; such competitions to be of a simple uniform character and limited to architects within a reasonable geographic area in which the building is to be erected.

This resolution carried the implication the majority felt that the plan submitted is too complex but that they did agree, in principle, to a competitive method of selecting architects for Federal buildings of considerable size.

To illustrate, a recommendation in the competitions committee report was adopted, as follows:

"As a general recommendation, the committee recommends avoidance of competitions which are of obvious economic loss to the profession as a whole."

It was brought out in the debate that any plan would, of necessity, have to be national in scope and, properly, should be referred to our national organization.

Upon a communication from the Washington State Chapter which outlined a plan being promulgated by the Advisors of the HOLC for the establishing of a graduated lump sum fee basis for work under the Bureau which would approximate 3.3%, the committee on practice offered the following recommendation which was accepted with the general report:

"Altho we have no such set-up in our State, we would protest the principle of under-payment of architects. Architects should not be discriminated against in comparison with other branches of the industry."

On the recommendation of the board of directors, the secretary introduced the following

amendment to the By-Laws of the Chapter:

RESOLVED: That ARTICLE 1, SECTION 4, CHAPTER MEMBERS—be amended by adding thereto the sentence, "No further memberships in this class shall be created".

On the recommendation of the membership committee, Thomas J. Kent introduced the following amendment to the By-Laws of the Chapter:

RESOLVED: That ARTICLE 3, SECTION 2, INITIATION FEES—be amended in line three (3) by deleting the words "Ten ($10)" and substituting therefor the words "Five ($5)"; and, further, in line eight (8) by deleting the words "Ten ($10)" and substituting therefor the words "Five ($5)".

The next regular meeting, to be held November 27, 1934, was set as the date for final action upon the amendments. It was instructed that the prescribed notice of such proceeding be published to the membership of the Chapter.

The exhibitions committee recommended the holding of the Biennial Honor Award Exhibit in the spring or summer of 1935.

Officers were then elected for the coming year. In accordance with the recommendation of the nominating committee, submitted at the September meeting, the following were duly elected:

President, Albert J. Evers; Vice-president, Will G. Corlett; Secretary-Treasurer, James H. Mitchell; Directors for three years, Warren C. Perry and William Wilson Wurster.

The motion of Mr. Bakewell for the appointment of an advisory committee to the Art Commission, consisting of five members, was carried.

On motion of Mr. Garren, letters were instructed to be sent to the California Redwood Association and to the Paraffine Companies, Inc., in appreciation of their effort through radio broadcasts to bring public attention to the value of architects' services.

On further motion of Mr. Garren, it was instructed that a letter be sent to the Producers Council Club, in appreciation of its splendid support of the Chapter.

In discussion of an announced 7½% architectural fee for work under the HOLC, it was understood that the Bureau will handle all contracts and accounting. On this basis the fee was thought fair and the motion of approval by Mr. Michelsen was carried.

It was the sense of the meeting that endorsement of the attitude of New York Chapter on the Federal policy on public works would not be politic until efforts in other directions have been exhausted.—J.H.M.

LOS ANGELES ARCHITECTS MEET

Southern California Chapter, A. I. A., had for its guest at the November 9th meeting F. W. Marlow, director of the Federal Housing Administration for the district of Southern California. Mr. Marlow outlined the Administration's program, using as his subject "The Operation of the Federal Housing Act."

John Parkinson spoke of the many places visited during his recent trip abroad and described a number of out-of-way points in Western Europe that are of particular interest to the architect.

Ralph C. Flewelling, reporting on activities of the public works committee, read a letter from Secretary of the Treasury Morgenthau, responding to a letter outlining the Chapter's proposed competitions on public buildings. Secretary Morganthau stated that the time element prevented holding competitions and that the selection of architects on public works would be handled in accordance with the department's recent ruling. Consideration is being given to appointment of private architects in a consulting capacity, except on the small standardized jobs, plans for which will continue to be prepared in the supervising architect's office in Washington.

In this connection, Mr. Flewelling read a statement appearing in the October number of Architecture. The editor's diary in that issue reads in part as follows: "The Federal policy of designing in Washington the government's own post office and other public buildings still remains the chief topic of conversation among architects. One architect in New York, whose taste is impeccable, took photographs of recent government buildings throughout the United States, covered up the credit lines and graded the various buildings from A to F, judging necessarily on exterior appearance.

"It was found, when all had been classified, that buildings designed by the Treasury Department had higher ratings than those designed by private architects. On the other hand, there were no A ratings in the Treasury Department work, nor any F's. In a word, the government-designed architecture maintained a higher, if not an especially brilliant standard. All of which leads to the conclusion that the Secretary of the Treasury could perhaps justify, esthetically, his recent ruling."

Progress being made on work coming under the direction of the Historic Monuments committee was reported by Carlton M. Winslow. Funds have been provided to carry on the work for the time being, furnishing employment for 60 draftsmen. The Chapter is helping finance and supervise the program, with Henry F. Withey in charge.

Considerable discussion was devoted to the "Field Bill", requiring school buildings to be designed to resist lateral forces, the consensus of opinion being that the bill should stand as passed, that any change might endanger the entire measure, and that its provisions are working out satisfactorily.

Temple H. Buell, architect of Denver, was introduced by Sumner Spaulding, president of the Chapter, who presided at the meeting.

OREGON CHAPTER

Regular meeting of Oregon Chapter, A.I.A., was held October 16 at Calder's

After dinner, the meeting was called to order by President Parker. The minutes of the meeting held September 18th were read and approved. Mr. Crowell reported that a meeting of the competition committee was held with Mr. Roehr, chairman of the publicity committee, for the purpose of considering honor awards for architectural work. Progress was made, and a final report will be presented at the next meeting.

A written report, prepared by Mr. Aandahl, chairman of the public works committee, stated that a committee of the City club has recommended that the interior of the old post office building be remodeled to accommodate Government offices.

Mr. Stanton moved that, in cooperation with other societies of like mind, the report be followed up and a request be made to the City Council to act in line with the recommendation of the City club. Seconded and carried. The names of a number of prospective Associates were discussed.

A discussion of the mentor system advocated by N.C.R.A. Boards was led by Mr. Stanton, who suggested that architects resume the custom of visiting the architectural school at Eugene each term. Mr. Parker read several letters from Mr. Lawrence pertaining to the proposed mentor system and one letter objecting to the proposed amendment to the Oregon Registration Law. The education committee was instructed to make a further study of the mentor system and bring in a report with recommendations at the next meeting. It was announced that the O.B.C. has written a letter to the Mayor requesting that technical men be appointed to the vacancies on the City Planning Commission.

Mr. Jacobberger led the discussion of the proposed amendment to the Registration Law.

It was moved by Mr. Bear that the Chapter endorse the spirit of the proposed amendment and that efforts be continued for its enactment. Motion was seconded by Mr. Jones and carried. —L.D.H.

WASHINGTON STATE CHAPTER

At the October meeting of the Washington State Chapter, A.I.A., "Technocracy" was the chief subject of discussion. Harry Wolfe, recent graduate in architecture from the University of Washington, give an outline explanation of the new economic theory. An active discussion followed. President Robert F. McClelland presided.

The National Fellowship of the American Institute awarded at the May convention in Washington, D. C., to A. H. Albertson was formally bestowed upon him, the presentation speech being made by B. Marcus Priteca.

John Graham gave a short talk on his summer's sojourn in China. Harlan Thomas told of some of the things he saw and heard on his recent trip to Mexico.

TERMITE RESOLUTION

The following resolution was adopted by the State Association of California Architects at its convention in San Francisco last month:

Whereas: The weakness resulting from the depredations of termites has become a hazard along with that of fire and earthquake; and

Whereas: The State requires that other public menaces, such as infectious diseases, be reported to the constituted authorities, now therefore be it

Resolved: That the State Association of California Architects in its seventh annual convention assembled in San Francisco, California, recommend that the Committee for Technical Advice make a study of the desirability of measures requiring architects, contractors, members of the building trades and realtors, similarly to report all cases of infestation by termites.

ALL-YEAR AIR CONDITIONING

With the growing importance of air conditioning for controlled atmosphere in all types of buildings, it is now practically certain that an all-year air conditioning plant will become an essential part of the modern home just as much as modern plumbing or proper architectural design.

Heating, cooling, humidity control, air cleaning and air motion are the five practical phases of air conditioning. The selection of equipment to properly cope with the heating or cooling, the humidification or dehumidification, and the air cleaning and motion phases of the complete air conditioning problem would be reasonably simple if there were not so many ways of accomplishing each phase. However, it is comparatively simple, and particularly so with gas as the fuel, to tie the modern warm air furnace into the complete air conditioning installation on this central source basis.

It is being predicted by heating men that for homes, a small gas-fired steam boiler may become the focal or starting point of a compact and simple air conditioning plant. This boiler would provide steam for heating water on an indirect basis for the heating and humidifying phases, and direct steam for a steam jet refrigeration system to take care of the cooling phase. The air motion and air cleaning phases would be handled by fans and filters at the circulating units. With a simple forced circulation piping system to convey water heated in winter and cooled in summer, it would not be a serious problem to decide where the circulating units should be located. It would not make a great deal of difference whether they were room or central units or a compromise between the two extremes.

In regard to the choice of equipment as the focal point in air conditioning, in particular the choice between the hot air furnace and the steam or hot water boiler, the alert architect, engineer, contractor or manufactureur is going to find it necessary to thoroughly familiarize himself with the subjects of summer cooling and dehumidification, and winter heating and humidification. The dependable architect will no longer be able to regard the heating problem as a matter of rectangles marked "radiator" or "registers" on his plans. The best interests of the home owner can be guaranteed only by the careful selection of properly designed equipment at the time the house is being planned, so that his heating and air conditioning system will not be left to last-minute, more or less hazardous choice.

MODERNIZATION LOANS

Banks representing more than 75 per cent of the total commercial bank resources of the United States have accepted contracts of insurance in order to make modernization loans, according to Washington dispatches to the San Francisco office of the Federal Housing Administration.

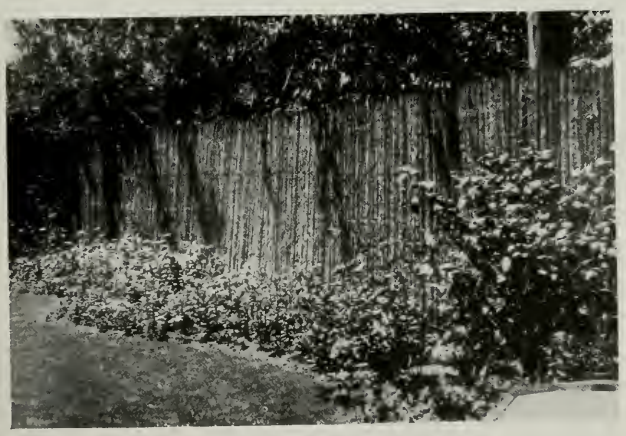
The resources of the accepting banks exceed 34 billion dollars, the administration announces.

The better housing program announces that this is unprecedented national recognition of any project so far undertaken as a means for the restoration of prosperity.

IN NEW OFFICES

Messrs. Plummer, Wurdeman and Becket have moved from 1108 Story Building to 901-902 Architects' Building, Fifth and Figueroa Streets, Los Angeles.

F. D. Harrington, formerly at 435 I. W. Hellman Building, now has his office at 1030 North Western Avenue, Los Angeles.



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Types—

Tight-woven, bark on one side.
Open Picket, bark on one side.
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Adaptable for—

Rustic backgrounds.
Color contrast for flowers.
Boundary lines.
Windbreaks.
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To screen objectionable views.

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MONEL METAL

[*High Nickel Alloy*]

is the accepted material for soda fountains and lunch-room equipment, just as it is the universal metal for food service equipment in leading hotels and restaurants throughout the country.

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[*Acid Resisting Iron*]

is the accepted material for draining waste lines. CORROSIRON meets all State and Municipal specifications for drain lines from school laboratories and chemistry rooms

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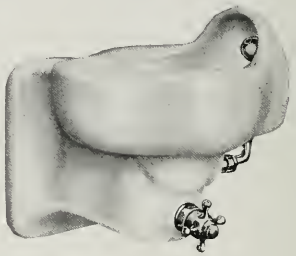
HAWS

SANITARY DRINKING FOUNTAINS for SCHOOLS

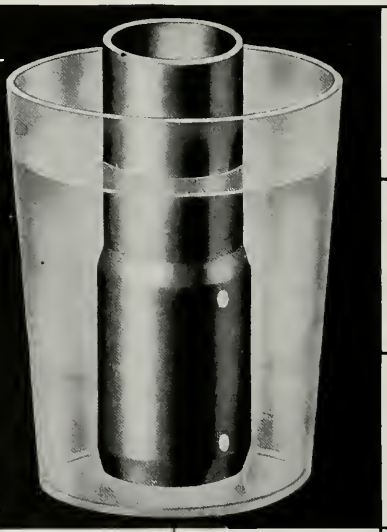


MODEL NO. 7A fountains are installed in San Francisco, Oakland, Los Angeles, Sacramento, Portland, Seattle, Fresno schools —and others too numerous to mention.

Haws Sanitary Drinking Faucet Co.

1808 HARMON STREET, BERKELEY

RUST PROOF



STREAMLINE fittings and copper pipe cannot rust. Once installed, they will outlast the building itself.

There will be no leaking, rusty water, damaged furnishings, walls or ceilings when these materials are specified.

Their use is especially desirable in concealed work because the plumber or steamfitter can actually tell by visual inspection, without resorting to a pressure test, that the joints he is making are rust, leak and vibration proof, a perfect bond of pipe, solder and fitting—an advantage no other connection possesses.

Let us send you our A. I. A. File 29 B4

NORMAN S. WRIGHT & CO.
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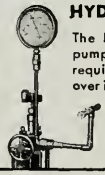
STREAMLINE PIPE AND FITTINGS
PORT HURON, CO. MICHIGAN
DIVISION OF MUELLER BRASS CO.

OLSEN PULLING TEST

¾ in. Extra-Heavy Copper Pipe fails at approximately 9500 lbs. in the Olsen pulling machine—the joint itself never breaks.

HYDRAULIC TEST

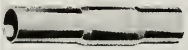


The hydraulic pressure pump test shows that it requires 1000 lbs. or over internal pressure to fracture Standard STREAMLINE Copper Pipe. The joint itself remains intact.

SPACE SAVING

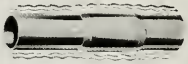
Note space saving qualities—no room required for wrench handling.

BEAUTY OF DESIGN



STREAMLINE fittings insure a joint actually stronger, though very little larger in diameter than the pipes which they connect.

VIBRATION-PROOF



Vibration is not localized at the joints but dissipated over the entire system.

NON-CLOGGING

The interior is exceptionally smooth—no clogging.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Owing to the various crafts accepting the NRA code of fair competition, in some cases they have adopted a schedule of prices, and it therefore would be advisable to get in touch with these firms direct.
Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $35 to $40 per 1000 laid, (according to class of work).
Face, $75 to $90 per 1000 laid, according to class of work).
Brick Steps, using pressed brick, $1.10 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings. $.75 sq. ft.
Common, f. o. b. cars, $15.00 job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots).

8x12x5½	$ 94.50
6x12x5 ½	73.50

Discount 5%.

Composition Floors — 18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month. following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots. f. o. b Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b.) Job. S.F.) $2.90 per bbl.
Cement (f.o.b. Job, Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Medusa "White" .....$ 8.50 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place, exclusive of forms, 30c per cu. ft.
4-inch concrete basement floor.....12½c to 14c per sq. ft.
4½ inch Concrete Basement floor .....14½c to 16c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Meduca Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs. $75.00 per balcony, average.

Glass (consult with manufacturers)—
Double strength window glass. 15c per square foot.
Quartz Lite, 50c per square foot. Plate 75c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.
Note—Add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron. etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$35.00 per M
No. 2 common	28.00 per M
Selected O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	48.00 per M
1x4 No. 3 flooring VG	42.00 per M
1x6 No. 2 flooring VG	48.00 per M
1¼x4 and 6, No. 2 flooring	52.00 per M

Slash grain—

1x4 No. 2 flooring	$39.00 per M
1x4 No. 3 flooring	34.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ 1.00 per bdle.
Redwood, No. 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.
1 1-16x2¼" T & G Maple	132.00 M ft.
⅞x3½ sq. edge Maple	140.00 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	

Laying & Finishing 13c ft. 11 ft. 10 ft.
Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—
O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel. 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel. 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.
Dining room cases, $7.00 per lineal foot.
Labor—Rough carpentry. warehouse heavy framing (average), $12.00 per M.
For smaller work average. $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—
Two-coat work ..... 29c per yard
Three-coat work .....40c per yard
Cold Water Painting .....10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).
Per Lb.
1 ton lots, 100 lbs. net weight 10¾c
500 lb. and less than 1 ton lots 11c
Less than 500 lb. lots.....11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).
1 ton lots, 100 lb. kegs, net wt. 10¾c
500 lb. and less than 1 ton lots 11c
Less than 500 lb. lots.....11½c

Red Lead in Oil (in steel kegs)
1 ton lots, 100 lb. keg s,net. wt. 12½c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots.....13c
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00	lineal foot
8-inch	1.50	lineal foot
10-inch	1.75	lineal foot
12-inch	2.00	lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish No. 18 gauge wire mesh	1.50
3 coats Medusa finish No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.

2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks, Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—
From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat. with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—
Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—
Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural
$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—
$85.00 per ton, set, (average).

Stone—
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile — Floor, Walnscot, Etc. — (See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE FOR 1933

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestor Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20

*Established by Special Board

CRAFT	Journeyman Mechanics
Iron Workers (Bridge and Structural)	9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00

CRAFT	Journeyman Mechanics
Stair Builders	7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

PRODUCERS COUNCIL ACTIVE

In appropriating funds to promote recovery by reviving building, Congress should aid private construction rather than expand the program of public works, J. C. Bebb of New York, president of the Producers' Council, affiliated with the American Institute of Architects, declared in an address at the eleventh semi-annual meeting of the Council in New York recently.

Mr. Bebb foresaw an upturn in apartment house construction following a housing shortage which, he said, was near. Many authorities feel, according to Mr. Bebb, that in 1937 the country will be in the midst of a real building boom. Removal of uncertainty, he asserted, is essential to the acceleration of building activity.

"The next congress will undoubtedly have a lot to say about further large amounts for public works," said Mr. Bebb, whose theme, the keynote of the meeting, was "Revival of Building and Use of Quality Products."

"There is a feeling that the Public Works Administration will ask for further large amounts for public works. However, in view of what has happened in that field, the construction industry is apparently very definitely of the opinion that any such appropriation by Congress should be devoted to encouraging private construction rather than for additional public works.

"The recent convention of the American Bankers Association in Washington may have a very beneficial effect on the situation. We hope the industry will be helped considerably by the release of funds lying idle in the banks.

"The latest figures show a real housing shortage as being very imminent, thus providing an incentive for apartment house construction. It may be some time yet before there will be any appreciable construction of office buildings, hotels, or department stores, but it is all bound to come. Many authorities feel that by 1937 we will be in the midst of a real building boom. Let us hope this will come to pass, but at the same time let us sincerely trust that if it does we will have learned our lesson and we will not let this boom run away with us as the last one did.

"Every one, from the President down, is now apparently ready to admit that recovery cannot be said to be under way until private building construction is revived in a large way. The only way to revive it is to remove the present state of uncertainty as to the future and provide means for financing projects that are ready to go forward as soon as such funds are available.

"Realization of this condition resulted in the passage of the Federal Housing Act, which made it possible to obtain funds for the construction of new houses up to $16,000 and to get funds for modernization of houses, up to $2,000. A

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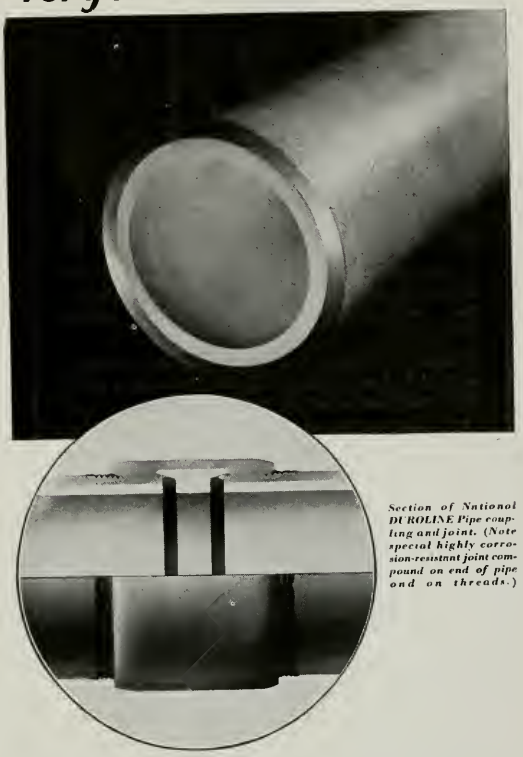

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number of our members report splendid results from their campaign to induce home owners to take advantage of these opportunities.

"At first these government activities were confined to housing only, but a way seems to have been found to extend the field, so that business buildings can take advantage of the modernization loans. Undoubtedly, the next Congress will still further expand the Act so that larger buildings can benefit."

A delayed recovery accepting the need for quality materials is to be preferred to a quicker recovery involving the use of inferior products, Mr. Bebb declared, warning that the present scarcity of money and the desire for quick results will lead to a tendency to use inferior materials, in turn causing large repair bills and an accumulated obsolesence.

Conditions in the building industry are improving, H. H. Sherman of New York said in his report as executive secretary of the Council. "The coming year," Mr. Sherman added, "offers opportunities which the building industry has not experienced in several years. Every branch of the industry is preparing for renewed building activity and no stone should be left unturned to expedite it."

The Council's membership, according to Mr.

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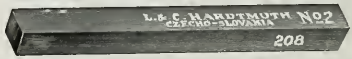

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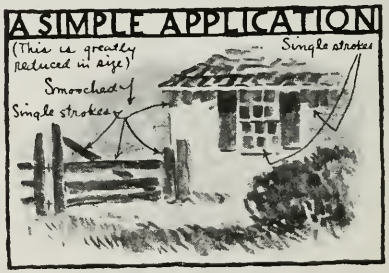

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Sherman, now comprises forty-one manufacturers and associations of manufacturers of building materials and appliances, representing "the cream of the producing industry." Clubs organized by the Council in many parts of the country are co-operating with the Federal Housing Administration, he reported.

MOSAIC CEILINGS

A preview of the largest mosaic ceilings in the United States, covering 11,000 square feet, in the entries to the Great Court of the new Department of Justice Building, Ninth Street and Pennsylvania Avenue, Washington, D.C., was held October 24. The monumental court of this building is the largest in the United States.

The ceilings are said to be the first mosaic ceilings that have ever been made integral with the structure of a building. They are precast in architectural concrete and the only mosaics of their kind to be made entirely of domestic materials.

In designing the Department of Justice Building, Zantzinger, Borie and Medary, the architects, used these ceilings as the only touch of color to be employed in the exterior composition of the entire triangle of $100,000,000 worth of Government buildings.

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HARDWOOD LUMBER MEN MEET

At the recent annual meeting of the Pacific Coast Hardwood Wholesale Distributors' Association the delegates went on record as opposed to the proposed form of contract prepared by the National Industrial Recovery Board for wholesalers seeking advantages of wholesale discounts until other problems of the wholesalers have been satisfactorily adjusted. Recognizing that the proposed form of contract has certain merits the association points out that no satisfactory definition of wholesalers, wholesale distributing yards and wholesale distributing trade has been adopted; that the penalty for violation of price provisions of the code by manufacturers is not being enforced and that recent court decisions denying the legality of cost protection prices will tend to further demoralize the price situation. The proposed form of contract it regards therefore as "unfair, impracticable and inequitable." A penalty of 25 per cent of the amount of each transaction and a maximum of $500 for liquidated damages on proof of violation by arbitration would be imposed by the contract.

Officers elected for the ensuing year are: President, C. H. White, White Bros., San Francisco; vice-presidents, James Emerson, Emerson Hardwood Company, Portland, Oregon, and Frank Connolly, Western Hardwood Lumber Co., Los Angeles; secretary-treasurer, B. E. Bryan, Strable Hardwood Co., Oakland.

Directors: J. Fyfe Smith, J. Fyfe Smith Co., Vancouver, B. C.; A. L. Bates, J. J. Matthews Hardwood Co., Seattle, Wash.; Ted Higgins, J. E. Higgins Lumber Co., San Francisco; H. W. Swafford, E. J. Stanton & Son, Los Angeles; C. M. Cooper, W. E. Cooper Lumber Co., Los Angeles, and A. A. Frost, Frost Hardware Co., San Diego.

The next convention will be held at Del Monte, in 1935.

BOOSTS ARCHITECTS OVER KGO

On Tuesday night, October 23, California Redwood Association launched the first of a series of broadcasts over KGO, San Francisco, in the interest of better housing.

A special feature of each broadcast will be a series of three minute talks by representative architects selected for their ability to tell the architect's story in a convincing manner.

William I. Garren, President of the State Association, Northern section, delivered the first talk. W. C. Hays, Henry Gutterson and William Mooser have also given radio talks.

The redwood broadcast occurs each Tuesday at 7:30 P.M. directly following the NBC sustaining program in the interests of Better Housing.

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INDIAN ARCHITECTURE

For want of imagination, Mayan engineers never discovered the principle of the true arch. They never learned the trick of bonding or overlapping their building stone to make a firmer structure. This is the verdict of Engineer Lawrence Roys, who has just completed an appraisal of the engineering knowledge of America's most famous pre-historic builders. Mr. Roys made his study under the auspices of the Carnegie Institution of Washington.

Where stone was used in artistic expression, it came alive. But the engineers and architects who laid the plans and raised the walls achieved no comparable progress in technique. They do not seem to have tried using wood to supplant stone in their more permanent structures. Their wall building methods set up strains when the foundations settled and resulted in long vertical cleavages. They apparently never racked their brains to avert such mishaps.

As for their greater engineering achievement, Mr. Roys considers this to be the vaulted roof. Somebody used imagination there.

It is impressive now to consider that Indians, with not very much imagination for engineering problems, nevertheless built the most distinctive, and some critics have said, the most beautiful, architecture to be seen anywhere in the Americas.—*Science News Letter.*

CATALOGUE

A catalogue of completed records of the Historic American Buildings Survey, made under the direction of the National Parks Service, Branch of Plans and Design, United States Department of the Interior, has just been issued. Subjects are included from thirty-nine states and are listed by the name of the structure, the survey number, the number of sheets of measured drawings and the number of photographs.

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The final repository for the recent and future survey records will be the Library of Congress. Architects and others interested in these records will have free access to the data, which is in charge of Dr. Leicester B. Holland, at the library. The drawings and photographs are not to be copyrighted so that full-size copies of any document may be bought for a nominal sum (just enough to cover the cost of prints) and used as the purchaser sees fit, for republication or simply for reference.

The active government interest and support for the recording of early American architecture was obtained by the cooperation of the National Parks Service, the Library of Congress, and the American Institute of Architects.

PLANNING

New attention is directed to the importance of population, as a subject for research and planning, by the reported movement of transients and settlers to the Pacific Northwest. Not only this emergency problem of immigration, but those of land and water use, markets for production — particularly new power, and of other resources and plans, suggest the solving, so far as analysis and foresight will permit, of two vital questions: (1) What are the present, and what will be the probable future, population patterns of the region and its elements; and (2) what are the present, and what will be the future, capacities of the region and its elements to support population at a high standard of living?

The present population of only about 3,500,000 in the Pacific Northwest, in an area of nearly 400,000 square miles, suggests that there may be practically unlimited room for population expansion, but this is not necessarily the case. The topography and classifications and uses of lands, the water resources, the power, minerals, potential industry and

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commerce, and many other factors and their relations and effects must be analyzed and weighed. The regional planning commission plans to carry on a study of all of the conditions and factors involved in population distribution and growth. In this study it hopes for the interest and cooperation of state planning bodies and of the region's institutions of higher learning.

The immediate problem involved—the meeting of a movement already under way, with the minimum of harmful land boom, individual exploitation and confusion, and with the maximum of benefit to individuals, states and region and of order and efficiency—calls not only for serious effort in appraisal of the situation, planning and dissemination of facts, but for organized and cooperative effort and action to meet the land, employment and relief requirements. —*Planning News.*

IMPERSONATED

[*San Francisco Call-Bulletin*]

An amazing story of a swindle put over on the California Pacific Title and Trust Company by a man who impersonated Julius E. Krafft, retired San Francisco architect, was being unfolded today before Superior Judge Edward P. Shortall.

The impostor, while younger than Krafft, simulated a limp and mannerisms of the man he impersonated, "took in" several persons, pocketed more than $2200 borrowed on property owned by Krafft in Geary Street, near Hyde, and disappeared.

The title company, victimized by the man's clever acting, made good a loan of $3000 on the property by Mr. and Mrs. Sherwood J. Allen and is suing Mrs. Eleanor J. Smith, a notary, and the United States Fidelity and Guaranty Company to recover the money.

The bogus Krafft applied first for a loan on the property owned

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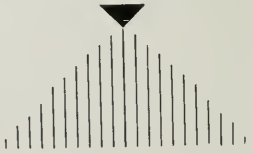
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by the retired architect, to a man named Roth, who in turn negotiated with Melvin Herriges, who interested the Allens.

The latter agreed to lend the money to the pretended Krafft and he executed a promissory note to them as well as a deed of trust to the Geary Street property as security, which he had acknowledged before the notary.

The impostor ordered a title search of his property by the California Company. While this was being made Mrs. Allen gave instructions that $558.76 was to be withheld to cover taxes on the property for two years. This necessitated a change in the papers. The pretended Krafft had left an Oakland address and telephone number—it developed later there was no such address — but this had been mislaid.

Search for the man who had ordered the title search resulted in a telephone call to the residence of Julius E. Krafft, 2829 Divisadero Street. He was not at home, but a message was left for him to call the title company.

The next day in walked the pretender once more. He sat quietly for half an hour until it was his turn to be waited on, completed his negotiations, received the amount of the loan, less taxes, search charges and the like and never has been seen or heard from since.

The forgery was discovered by Harriges, who notified Mrs. Allen, and the title company returned to the lenders the $3000 they had placed in escrow.

The company is out the amount paid the forger less some $700 withheld. Search for him continues, with a possible fourteen years term if he is found.

ARCHITECTS' FEES

Co-operating with the National Housing Campaign for Modernization, the State Association of California Architects has approved the following fees to be charged for architectural services on alteration work:

Initial consultation and architectural diagnosis, $10.00.

Additional consultation office visits (up to 1 hour), $3.00.

Inspection visits at job, $5.00.

Drafting, (per hour), $2.50.

It is understood that the foregoing fees apply to partial and incidental services. When full architectural services are needed or required they should be charged for at not less than 10%.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT. CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of the Architect and Engineer, published monthly at San Francisco, Calif., for October 1, 1934.

State of California } SS.
City and County of San Francisco }

Before me, a notary public in and for the state and county aforesaid, personally appeared W. J. L. Kierulff, who, having been duly sworn according to law, deposes and says that he is the Business Manager of The Architect and Engineer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (if daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

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W. J. L. KIERULFF, President.

Sworn to and subscribed before me this 27th day of September, 1934.

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...This Month...

GRACE CATHEDRAL, SAN FRANCISCO

Lewis P. Hobart Writes About the Design
Homer M. Hadley Describes Gothic Motifs
Curtis Smith Notes Structural Features
Chas. J. Connick Tells of the Windows

■ ■ ■

Distinguished Eastern Writer Says Architects Need a Saviour

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More Photos in Historical American Buildings Survey

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Nathaniel Blaisdell Again Contributes Interesting Sketches Made Abroad

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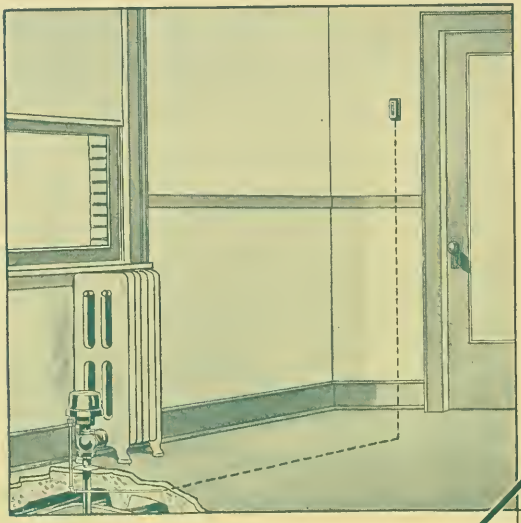

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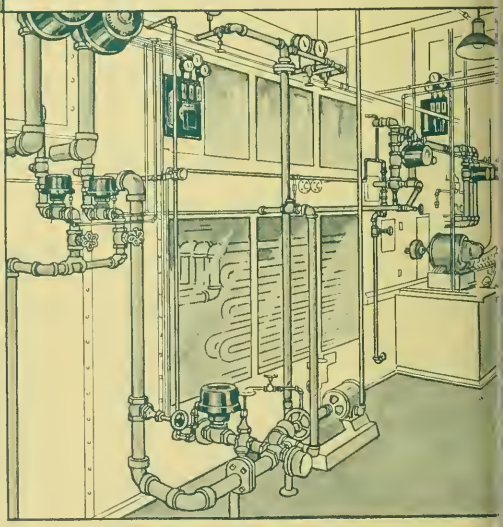

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Notes and Comments

MR. HOBART'S Grace Cathedral, and to which this number is largely devoted, may well be classed as one of the world's outstanding examples of ecclesiastical architecture. Vigorous, vital and effective in detail, it reflects a degree of study and understanding that very few of our present-day architects have displayed in their church work.

No greater tribute to Mr. Hobart's genius could be asked than that proffered by Ralph Adams Cram, distinguished architect in the East, who was a consultant in the early planning of the edifice. Mr. Cram says:

"I can truthfully say that Mr. Hobart has produced one of the most impressive, convincing, and promising schemes for an American cathedral that has thus far been brought forward during the process of creating in America a logical and consistent architectural expression of the Christian faith and the Christian polity. Not only the diocese, not only the church in the United States, but also the entire community must be grateful for what today is recognized as one of the great works of religious architecture in this country."

The problem of the San Francisco Cathedral was one not easy of solution. Physical considerations implied, and even compelled, a treatment that departed in certain particulars from the established precedents of the Middle Ages. It was necessary, frankly, to meet these conditions, yet at the same time to obtain an architectural effect that would be impressive and spiritually stimulating, while the sense of religious and architectural tradition would be scrupulously maintained. That these results have been achieved, and even beyond what might reasonably have been anticipated, the completed structure demonstrates beyond a doubt.

The site, standing 278 feet above sea-level, occupies a strategic position, dominating the city and the bay. There is probably no finer or more suitable position for a great spiritual monument than that on top of Nob Hill, San Francisco.

• • •

IT IS very deceptive to the public when we read in the newspapers that San Francisco's housing campaign had reached the $10,000,000 mark. It would be fine if that sum represented the actual amount the people will spend on improvements. But it does not. It merely indicates the owners' willingness to spend that much money provided he is able to obtain the funds.

Mr. Owner goes to his bank all enthused. First the bank wants to know if he has any other obligations—outstanding loans in particular—that he is paying on. In nine cases out of ten he has.

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That's the answer, at least in a great number of instances, to the query: "When will we start to spend these millions for modernization work?"

However, there is some improvement, and some hope, as indicated in the national survey of the Housing Act published elsewhere in this number. The survey was prepared by Walcott & Holcomb, Inc., of Boston, and is worthy of study.

• • •

TODAY thirty-five states and the District of Columbia has registration or license laws for architects. The other thirteen states are meeting the inevitable slowly, and in most cases gracefully.

• • •

SOMEBODY has said that one trouble with the architectural profession is its avowed dislike of criticism. Architects are most sensitive to criticism, no matter how mild. They would have their works praised or ignored completely. Several years ago Irving F. Morrow wrote an article on Criticism for this magazine. It occasioned quite a little discussion and was reprinted in part by several Eastern publications. Mr. Morrow pointed out that if painters, sculptors and musicians could invite criticism the architect should be able to take it also. Without criticism how can we hope to improve and surely our architects are not so perfect that improvement is unneeded.

A leading member of the Royal Society of British Architects has some very positive ideas on architectural criticism, as indicated in the following paragraph culled from his address and printed in a recent number of the *Octagon*, official organ of the American Institute of Architects:

"One of the most potent means of enlivening the public interest in an art is criticism. Think of the state literature would be in without literary criticism! Where would the theaters be without dramatic criticism? Yet little or nothing has been done in architecture. Only three English papers (two dailies and one Sunday paper) retain the services of an architecturual critic! This is not the fault of the newspapers, for some of them would be quite willing to provide criticism of buildings if called upon to do so by the architects concerned. In any case, they can see that the architects' own professional Press has done little in this direction. The fault lies with architects. Many of them are afraid of criticism and would rather be left in obscurity than take the risk of unfavorable opinions. This is a selfish point of view, for the public has a *right* to know more about the buildings that line its streets, and incidentally it will never take an interest in those buildings or in the work of architects until it can have opinions about those buildings. It cannot think any the less of a man because his work is criticized, for at the moment it does not think about him at all. If even a criticism were most unfavorable, the public can always in the end judge for itself once its interest has been aroused. Thus the good men have nothing to fear from criticism, and, when their names come before the public, those names are remembered and a prestige becomes attached to them by the very fact of being remembered. Thus architects will find that "it is better to be damned than mentioned not at all."

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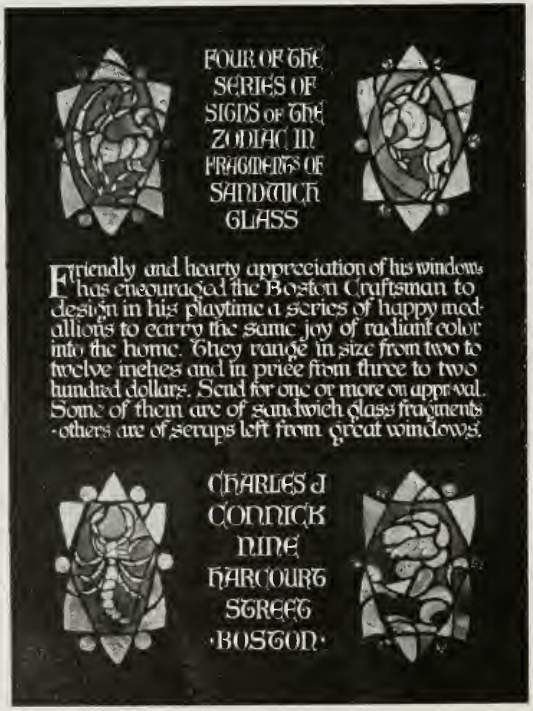
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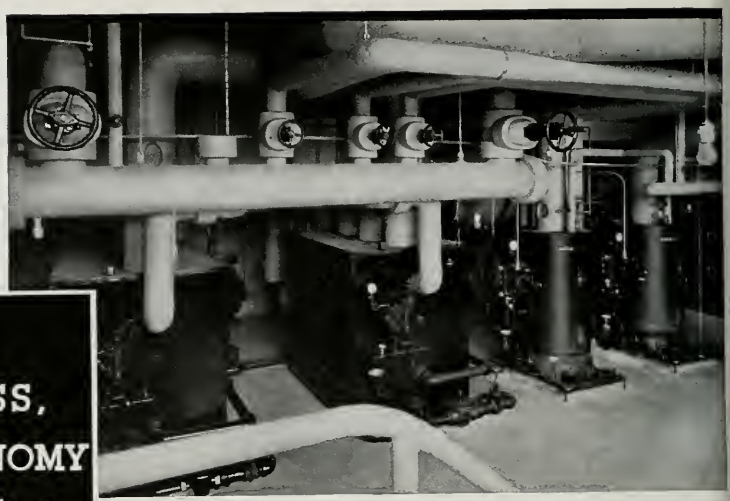

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NUMBER 3

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Contents

Frontispiece . GRACE CATHEDRAL, SAN FRANCISCO
Lewis P. Hobart, Architect

TEXT

11 . . . . CATHEDRAL
Lewis P. Hobart, A.I.A.

13 . . . . GOTHIC DESIGN
Homer M. Hadley

23 . . . . WINDOWS IN GRACE CATHEDRAL
C. J. Connick, M.F.A.

27 . . . . SUPPLANTS STONE
Curtis Smith

31 . . . . WHAT'S WRONG WITH THE ARCHITECTS?
H. Van Buren Magonigle

41 . . . . ASTRAY IN EUROPE
Nathaniel Blaisdell

45 . . . . BUSINESS BETTER

49 . . . . SPANISH HOUSE

52 . . . . TERMITE REMEDIES
A. A. Brown

57 . . . . TUNNEL
Frederick Hamilton

59 . . . . WITH THE ARCHITECTS

PLATES AND ILLUSTRATIONS

12-28 . . . GRACE CATHEDRAL, SAN FRANCISCO
Lewis P. Hobart, Architect

Plan
Doorway
General View
Etching of Interior
Detail of Chapel
South Transept
Grace Chapel
Interior
Nave
Rose Window
Hotaling Memorial Windows
Steel Frame

34 . . . . GARDEN VIEW OF SOUTHERN CALIFORNIA HOUSE

35-40 . . . HISTORIC AMERICAN BUILDINGS SURVEY
Portfolio No. 7—The Sherwood Ranch

41-44 . . . SKETCHES ABROAD
By Nathaniel Blaisdell, Architect

49 . . . . PATIO, HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO
Chester H. Treichel, Architect

50 . . . . STREET VIEW AND PLAN, HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO
Chester H. Treichel, Architect

51 . . . . RECEPTION HALL, HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO
Chester H. Treichel, Architect

53-54 . . . PHOTOS SHOWING DAMAGE TO BUILDINGS BY TERMITES

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Photo by Ansel Adams

GRACE CATHEDRAL, SAN FRANCISCO, CALIFORNIA
LEWIS P. HOBART, ARCHITECT

THE
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AND ENGINEER

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Cathedral

by Lewis P. Hobart, A. I. A.

THE architectural problem of Grace Cathedral has been highly interesting. Having been given a beautiful site crowning California Street hill, we were required to build a large structure for public service within a possible cost, construction to be carried on for a period of years, and at the same time to make it sufficient for the present needs of the Cathedral congregation.

Furthermore, a cathedral is of an entirely different character from a parish church, as it is the home of the Bishop, and is used for great public services, processionals, and religious pageantry, and demands a monumental scale.

The cost of stone being prohibitive, we have done the Cathedral in concrete. The necessity of having thick walls and broad surfaces and buttresses, gave an opportunity for an easy, vigorous expression in concrete, not possible in a smaller building with many windows. The concrete surface is without joints, no imitation of stone being allowed anywhere.

In choosing a finish for the concrete, we endeavored to find aggregates that would be obtainable for a number of years to come. On the surface of the concrete, we made about seventy experiments to find a way to obtain the desired texture. The first part of the work was done by stone masons with hammers. Then we found that the same result, or an even better one, could be obtained by using a pneumatic tool, and this we finallly adopted as the better way.

The simple massiveness of the interior will be relieved and enriched by the colors of the stained glass, oak choir stalls, red tiled floor and frescoes.

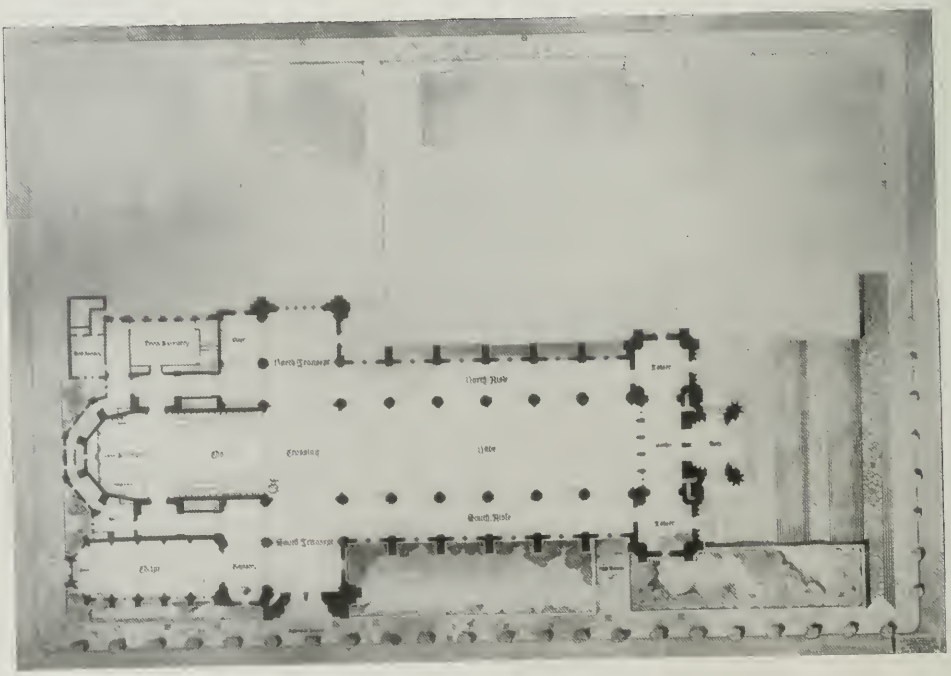
Eventually the crypt will be used for services for public meetings. The porch was developed to make a transition in the light from the brilliant sunlight on the ex-

terior to the dim light of the Cathedral. The spire will rise 250 feet above the hill, and will be visible from the bay with a lighted cross at night.

The Cathedral, when finished, will be 300 feet long from the rose window at the entrance on Taylor Street, to the chancel windows in the east. The width of the nave is 43 feet and the height 92 feet. In comparison, there are only two English cathedrals of greater height, these being Westminster Abbey and the Chancel of York Cathedral. The English cathedrals are long and low compared with the French cathedrals, which are usually high and not often of greater length than our 300 feet.

The earthquake problem was studied for a year before construction was started, by Professor Bailey Willis, and the construction thought out for the work by the engineers.

The Cathedral program anticipates a Diocesan House, residences for the Bishop and the clergy, a Synod Hall, and Choir School, on the Sacramento Street portion of the lot. When this great project is completed, San Francisco will have a fully equipped plant for the needs of the Diocese of California.



PLAN, GRACE CATHEDRAL, SAN FRANCISCO, CALIFORNIA
Lewis P. Hobart, Architect; Cram & Ferguson, Consulting Architects

Gothic Design

A Gem In Concrete

by Homer M. Hadley

ABOVE the beautiful stone altar in the chapel is a carved reredos of wood. Altar and reredos are ancient of days. 'Twas centuries ago that they took form. Men whose names and personalities are now utterly forgotten made them. Nothing but this expression of their thought and skill and feeling remains. Who they were who thought and felt and were skillful, who labored carefully, who delighted as this beauty came into being is known no longer. The waves upon the shore of time are spent and gone.

But their work remains for us to marvel at and almost unbelievingly to know. Our incredulity arises from the sight of such delicate loveliness, so slowly and painstakingly achieved. How could anyone have the time and patience and the sustained will to carve such intricacies of design and tracery from wood and stone? We today "simply cannot afford" such work, or if at all then only to a limited extent. How was it possible then?

Of course the answer is that then these men who, in their fundamental human feelings and emotions were not in the least different from us of today, had an utterly different conception of life and of what was "worth while." Henry Adams says that then men built cathedrals with an expectancy of gain and benefit quite as real as that which led to railroad building in the 19th century. So it may be. However, they also had a joy in beauty and a feeling of faith and gratitude that is not conspicuously revealed in railroad structures. Whatever may be the reason, in those days men carved in wood and stone and built mighty cathedrals and developed Gothic architecture and believed they could do things and did them that now we would wring our hands over the sheer impossibility of doing. And so it is that Grace Cathedral's chapel has its altar and its reredos that come from far off times.

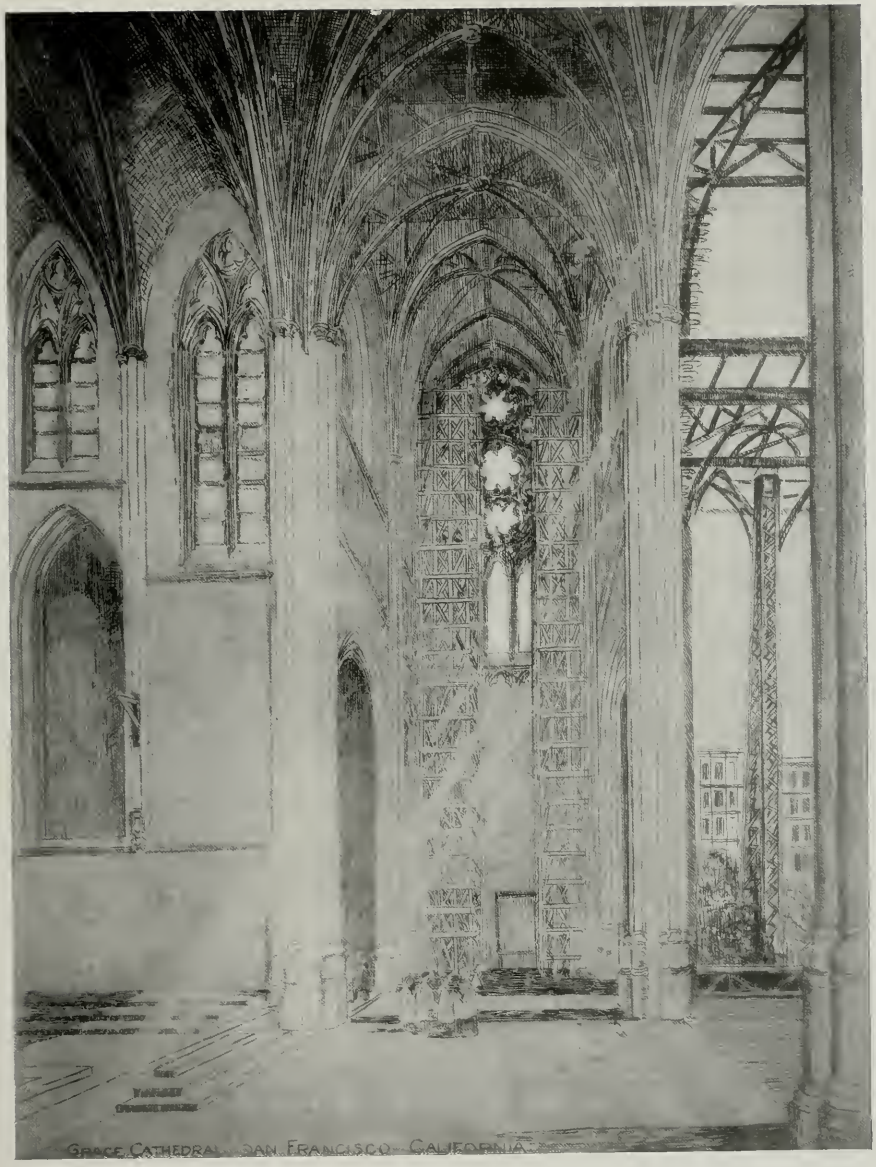
Photo by Homer Hadley DOORWAY TO SACRISTY

Also of those olden times is the Gothic shape and form in which this new Cathedral is being constructed. The massive off-

Dinwiddie Construction Co., Builders

GRACE CATHEDRAL, SAN FRANCISCO, CALIFORNIA

LEWIS P. HOBART, ARCHITECT



PROGRESS PICTURE, GRACE CATHEDRAL, SAN FRANCISCO
ETCHING BY W. C. F. GILLAM

setting buttresses against the outer walls, the lancet windows with their leaded jewel-like glass, the noble lofty-vaulted interiors whose great piers rise up to divide and fan into the intersecting arches of the ceiling—all these are characteristic and traditional forms of the architecture that developed in those times of devout faith and glorious church history. Moreover, there is a harmony of proportion and of scale and a dignity and a simplicity of treatment that even to the lay observer indicate study and care and ripe reflection. Such results are not achieved haphazardly.

Photo by Homer Hadley

DETAIL OF CHAPEL WALL

There is, however, one departure from tradition which is bound to challenge architectural judgment and approval. This cathedral which when completed will have few rivals in our western country in respect either to magnificence of size or richness and costliness of finish — this great cathedral set upon a hill for the Gothic design of which stone is the traditional material—is being built of concrete! There is a light built up, latticed frame of structural steel which constitutes the reinforcement but extensively within and almost completely without, concrete is the material which forms the final finished surfaces of the structure.

If contemporary Gothic designs must of necessity conform fully with the original—shall they be called "classical"—Gothic designs, then the anachronism of concrete's birth everlastingly estops its use in them. But by the same logic electric lights and modern heating and ventilating systems do likewise violate this rigorous standard and may not be used. Where, however, is the architect sufficiently staunch in his convictions to dispense with these modern indispensables? They are incorporated in his Gothic edifice, tradition or no tradition. It is the sensible thing to do and that justification is quite sufficient for the act.

As Grace Cathedral shows to all who see its beauty and its impressive dignity, the commanding power of the Gothic is a matter of form and mass and proportion, and is not a matter of details or of surfaces and textures. This is not said to belittle the charm of mediæval stone or the wonder of its carving. Neither would it seek to establish equality or degrees of inequality between concrete and stone. But it would advance the view that in the Gothic as else-

where, form is dominant, detail is subordinate. Of the truth of this fact Grace Cathedral is the complete demonstration. And to those who still are fearful of clashing incongruity between concrete and Gothic there is extended the comfort of the accomplished fact: the two are together in Grace Cathedral, yet full harmony prevails.

Still another accomplished fact in this great undertaking is the uniform character and excellence of the concrete. From the outset it was intelligently planned to secure this kind of concrete and the carrying out and execution of the plan was entrusted to experienced responsible builders who were genuinely desirous of obtaining it. They did obtain it. The concrete is not flawless nor completely free from blemish, but the defects and imperfections are occasional only and where they occur they are superficial and of a very minor character. There are opportunities in the execution of works like these for the use of skill and workmanship of the best and highest order.

The surfaces are lightly bush-hammered. The removal of the form marks and the exposure of the aggregate may suggest a drab monotony of appearance. Without the preservation of the form lines this effect probably would have resulted in large flat unbroken panels and areas. But due to the escape of a certain amount of water from the concrete through the joints between the form boards, the physical structure of the concrete is actually different—it is harder—where these joints occurred than it is elsewhere. Consequently and despite the bush-hammering, the horizontal joint lines persist in the surfaces, redeeming and enlivening them. Sills, arrises, offsets and belt courses are left smooth and untouched by the hammer. The impressive rose-windows of the transepts and the entrance at the south transept are of cast stone of a very superior quality.

In the present well-advanced state of the work which is being carried on progressively, a part and section at a time, the appearance of the finished and completed cathedral is clearly foretold. It is most excellent and successful. The proportions and great size of the structure, the mighty buttresses, the absence of joints, the complete unity of the whole, convey a feeling of dignity and of beauty, of strength, of security, of continuance through the ages, that is very fine indeed.

Photo by Homer Hadley

AN UPWARD VIEW

SOUTH TRANSEPT, GRACE CATHEDRAL, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

GRACE CHAPEL, GRACE CATHEDRAL, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

GRACE CHAPEL, GRACE CATHEDRAL, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

INTERIOR, GRACE CATHEDRAL, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

NAVE, GRACE CATHEDRAL, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

Windows

In Grace Cathedral

by C. J. Connick, M. F. A.

AN artist in stained glass lives in a world of light. Often his expressions take on a strange quality through that fact. For my part I occasionally feel that my friends in California must think me obsessed on the subject of light.

I sometimes smile to speculate just what effect my many sermons on the subject of surface light have had in San Francisco. Some of those sermons have been delivered to individuals, and some in public places.

Stained glass is the servant of architecture, and through many centuries it has been the very special personal servant and body-guard of Gothic architecture. So it is not strange that this great structure, Grace Cathedral of San Francisco, should, from its first inception, have captured my imagination.

There are many contributing reasons why Grace Cathedral should appeal so profoundly to me. Since my first visit to San Francisco during the Exposition, I have been fascinated with that City, and with its most unusual light.

Naturally enough my interest was quickened by the award to me of a gold medal for a group of windows I had sent to the Exposition at the suggestion of my old friend, the gifted John D. Barry, whose name has become a household word in California.

My impressions of San Francisco light began in 1916, and have been strengthened and deepened since that time through my visits to San Francisco and other California cities; it has also been influenced by visits made to such cities as Naples, Rome, Marseilles, Grenoble, and London. Of course I have had opportunities to compare the San Francisco light with that of many American cities, including Denver, Minneapolis, New York City, and Boston.

Through all these cities I have found that the light of San Francisco has one unique quality—a certain piercing intensity that is hardly appreciated because of the white cooling influence of recurring mists from the Bay.

The city whose light most resembles that of San Francisco in this respect is Naples, but even in Naples I have never found the penetrating quality of San Francisco light.

The city least like San Francisco is London, and yet there is sometimes an atmospheric quality in London vaguely related to the white mists of San Francisco. A very gray day in San Francisco recalls to my mind some bright days in London.

My really startling acquaintanceship with the penetrating power of San Francisco light came to me in a painful fashion. It was when I saw the devastating effect of surface light on my great chancel windows that I began the wild speeches on surface light in San Francisco. I didn't quite stop every man I saw on the street and, grabbing his coat lapels, proceed to harangue him on San Francisco light, but I did become almost as bad as that.

Of course the lighting of a great interior is a subject for an expert, even when

Rose Window by Chas. J. Connick

SOUTH TRANSEPT, GRACE CATHEDRAL, SAN FRANCISCO

LEWIS P. HOBART, ARCHITECT

windows are in panes of clear glass, or in great sheets of plate glass.

The introduction of color as it functions in stained glass windows greatly complicates the problem of interior lighting. That problem has been ignored for years in America through the fault of American glass men themselves. Ever since the introduction of American realistic windows in 1876 or thereabouts, the soft, turgid and opaque picture windows have evaded all problems of light everywhere through blanketing it. Musicians sometimes do the same thing with their soft and sweet waves of sound.

I am often reminded that musicians and glass men have much in common. Any lover of music will readily understand, for example, the comparison between an organ playing against the din of street traffic, and windows functioning vainly against the "noise" of a powerful white surface-light. In subject-matter, too, the worthy stained glass window often suggests a musical composition, and it is significant that one of Respighi's best known compositions is called "Stained Glass Windows."

The windows, grouped at different levels and exposed to different light streams, in a great edifice like Grace Cathedral offer gracious songs and symphonies within symphonies to worship God with His own marvelous element, Light. It was with such a conception that Dean Gresham, Bishop Parsons, and Architect Hobart developed with me the iconographic scheme now being carried out in the windows.

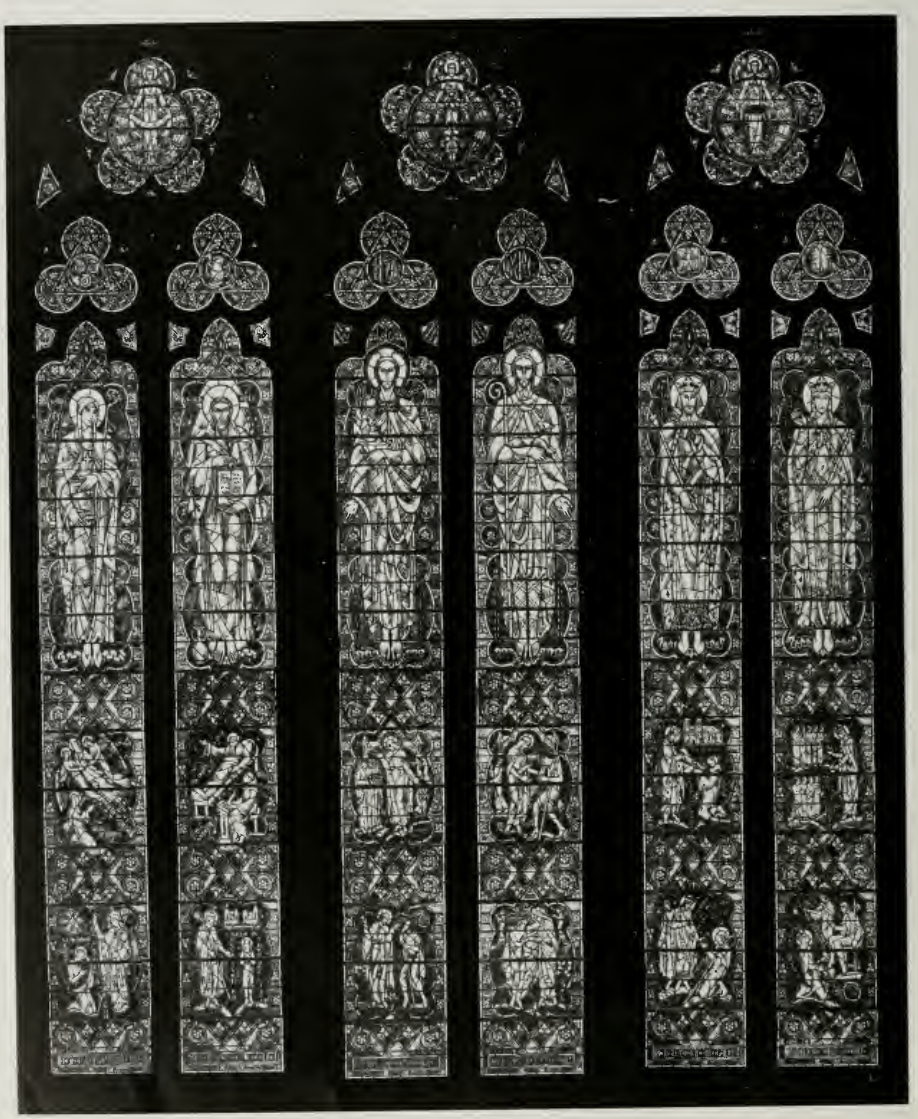
The nine great windows in the chancel have been chosen to present, in the gracious symbols of light and color, that glorious idea first brought forth by poets and architects among the early Christians — the Nine Choirs of Angels. Each Angelic Choir represents a spiritual attainment embodied in celestial form, and also approached by distinguished and saintly men and women of devoted lives on earth.

The Seraphim, most exalted of all angels, nearest the throne of God, symbolize Divine Love. Therefore the window devoted to the Seraphim has the place of honor in the very center of the chancel group. The figure of a seraph dominates the large tracery piece, and announces divine love as the theme of the window. Symbolic figures of Our Lord as The Light of the World and as The Good Shepherd are eloquent and powerful enough to carry their beautiful message to the very entrance doors of the cathedral when it is finished. Medallions underneath develop the significance of each figure with three parables and with the miracle from the Gospel of Saint John wherein Christ said, "I am the Light of the World".

Other chancel windows now in place are the Cherubim (Divine Wisdom) left of center, and the Thrones (Divine Power), right of center. The window devoted to the Archangels is in the south wall of the chancel nearest the crossing. In the chancel group are also two shorter windows that will be devoted to the Doctors of the Church. The great north and south transept windows now in place symbolize the Old and New Dispensations. The north rose heralds the Old Dispensation with the seven Archangels, Michael, captain of the Hosts of Heaven, in the center. Underneath, in the lancet-like panels are figures of King David and the four Major Prophets, symbol of the Old Dispensation that prepared for the New.

The south rose window presents the New Dispensation with the seven angels of the seven churches, while figures of Christ and four of his devoted followers symbolize the spirit of brotherhood that illumined the New Dispensation.

Windows symbolizing the beginnings of Christianity on one side and the Beati-



HOTALING MEMORIAL WINDOWS IN CHANCEL, GRACE CATHEDRAL, SAN FRANCISCO, BY CHARLES J. CONNICK

Windows Symbolizing the First Three of the Nine Choirs of Angels

tudes on the other also will enrich the north and south transepts. Lower windows will represent the Children of the New Testament (South) and of the Old Testament in the North, which will be placed just before Christmas.

The aisle windows in the nave are twelve in number and will present in saintly characters and symbolical figures the twelve Gifts that are called the "Fruit of the Holy Spirit." Of the first three on the south, the "Love" Window is now in place. "Joy", "Peace" will follow, and on the North to balance them will be placed "Steadfastness', "Meekness", "Faith".

The great eastern rose window will serve as a glorious presentation of Saint Francis' Canticle to the Sun, surely an inspired thought in relation to San Francisco's noble structure devoted to worship and praise.

Supplants Stone

Cathedral Is Concrete

by Curtis Smith

GRACE CATHEDRAL stands alone, not only as one of the world's most beautiful structures, but as an exponent of a new architectural treatment of concrete. Architectural concrete is used here most attractively—not as a cheap imitation of stone, but as a truly beautiful, new structural material. Through the use of bush hammering, or tooling, a texture of surprising quality has been obtained—not merely by removing the bond and exposing the aggregate as with the use of acid or acid compounds—but rather by shaving off the entire surface with a chisel, or diamond point, cutting through aggregate and bond alike and leaving exposed the beautiful interior structure of the stone itself.

Beauty is not the single virtue of this treatment. Through its use, Grace Cathedral becomes a massive monolithic structure. It has not been necessary to go to the additional cost of using stone or even cast stone, for structure and ornament have both been created in the pouring of the concrete. Through the use of plaster casts, all ornaments, all fluted columns, all details of any description, with the exception of the windows and the Cathedral entrance, have been formed with plaster as would a flat wall be formed with wood. All concrete ornamentation has been poured in place. Stripping of the forms has revealed not only the bare structure as we have known structural concrete, but structure and ornament are now complete in their rough form and it is only necessary to bush hammer or tool the surface to effect an harmonious composition.

The cost of this treatment is more than that of plain structural concrete, of course, since attention must be paid, not only to workability and ultimate strength, but color and texture must also be carefully considered. A slight variation in mix, may cause a change in color. Aggregates from different sources will show differences in texture, since, as mentioned before, not only the surface of the aggregate is exposed, but each bit of stone is laid open to expose its interior coloring.

A comparison of its cost with that of stone, or even of cast stone, is far more favorable, although this is not in any sense an imitation, but rather a modern substitute for stone. It has the advantage that it is not necessary to cast concrete in blocks or segments, then go to the additional labor and expense of laying, centering, plombing, and pointing. When the forms are built, this

Henry Dewell and T. Ronneberg, Engineers — Structural Steel by Judson Pacific Company

PROGRESS PICTURE, GRACE CATHEDRAL, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

work is all eliminated and the pouring of the concrete completes the job.

It is not easy to adequately picture this structure in words. One who would care to see a most impressive example of massive construction, will find himself well rewarded by a personal visit to the Cathedral. The building is a monument to the creative genius of Mr. Hobart, the architect.

Grace Cathedral · San Francisco

LEWIS P. HOBART, Architect

DINWIDDIE CONSTRUCTION COMPANY, Builders

■

The following firms have contributed to the successful completion of the Cathedral:

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THE MEDITERRANEAN FEELING PREDOMINATES HERE

Whats Wrong

With The Architects?

by H. Van Buren Magonigle

Pencil Points is running a series of essays by H. Van Buren Magonigle, F.A.I.A., being some frank discussions of present-day professional weaknesses—or what shall we call them? There are many who will agree with Mr. Magonigle and some who probably will take issue with him. That there is something radically wrong with the profession few will deny but whether it is good business to exploit these ills in the press is a matter of opinion. The public naturally forms a different viewpoint of the situation than the profession and it may be that the less said in print about the architect's shortcomings the better. If we are to correctly interpret Mr. Magonigle's criticism the officers of the Institute have failed dismally in their efforts to end bureaucracy in Washington. The most the architect can hope for is a job in Washington and that for the princely wage of a draftsman! Just where and upon whom shall we place the blame? Read what Mr. Magonigle says:

TO THE architects of the United States in and out of the Institute: Wake up! In the face of the most dangerous situation the profession has ever confronted, it is acting as though it were paralyzed and numb. It is also behaving as though it were dumb. Don't you realize that architecture as a profession is being swiftly destroyed, disintegrating under your very noses?

What have you done about it?

What are you doing about it?

What are you going to do about it?

Some of you have for years immersed yourselves in your private affairs, too indifferent or too timid to take an interest in the welfare of the profession that has given you your daily bread, and upon whose well-being and standing and prosperity your own depend. You have let others take the lead and do the work you should have helped to do, but of which you were very glad to reap the benefits. Those of you who are members of the American Institute of Architects and who have let others do your share of the work are doubly guilty, for you have accepted and thus fostered a kind of leadership that has brought you to a point where the architect has no influence whatever in the country, not even in building matters.

I prophesy that if the present trend continues the architect will be extinct and become a kind of clerk to Government bureaux or building contractors, and very soon.

You have permitted the Office of the Supervising Architect of the Treasury Department to be occupied for years by a lawyer—and you have not been able, in your weakness, to impress the absurdity of such a situation upon either the President or the Congress through successive administrations, whether Republican or Democratic. The recent and immediate situation is even more grotesque — sheer opera bouffe — a

Rear Admiral of the Navy is now in charge of the Government building program!

What are you doing about a condition worthy of being sung by Gilbert and Sullivan and accompanied by the laughter of the gods?

What is the Institute doing about this condition except pussy-footing around it?

You have permitted the Office of the Supervising Architect, instead of being merely a bureau for maintenance, repair, and supervision, to compete with you in design and execution. Have you neither courage nor vision? Now, when the Government is to embark upon a vast building program that rightly belongs in your expert and competent hands, you find yourselves ignored and you and your families either in want or only one remove from the bread line.

We have seen the Government announce that all buildings over $60,000 would be designed by the architects of the country. We have seen this countermanded by an executive order and the Government itself re-enter the field of design and construction on a vast scale in direct competition with the architects whom, as citizens of the class that is suffering most, it pretends to be restoring to prosperity.

Why has the American Institute of Architects and the rest of the profession permitted this to come to pass? And what has been done to change it? What kind of leadership is it that accepts such insults to a great profession lying down?

You have been badly led. The American Institute of Architects, alleged to be the official leader and spokesman for the profession, you have allowed to fall into the hands of men most of whom are not architects at all in any real sense. An architect is above all a man of constructive imagination. You have had specification writers, office managers, engineers, "practical" men, in your own employ. How much constructive imagination did they possess? And yet you, an architect, a man of constructive imagination, have permitted this type to acquire control of the Institute.

Are you afraid to clean house and get up and talk and act and vote against this non-professional drift? Or don't you care? Does even this plain talk get under your skin? I hope to God it does for that is what I am trying to do. But don't waste your rage on me. Save your rage and your energy for the rehabilitation of the profession and work to bring it back to what it once was in the public esteem. It has never been lower and it is the fault of each individual member of the profession.

I have watched the profession decline rapidly during the past ten years. I have watched the loss of professional ideals and the substitution of business objects. Little by little the "business architect" has impressed his low standards and commercial views upon a splendid profession until it is splendid no longer. I have seen the type of man who should lead the profession yield to those of the other type. I have seen men who should have held the professional standard high try in their turn to be "business men," emulating the commercial success of the "space merchant" and his ilk, dabbling in real estate transactions, aspiring to the mysteries of the "financial set-up," trying to be promoters, "selling" architecture—a sickening sight.

I have seen the collegiate schools of architecture infected by the poison and the establishment of courses in this sort of thing. And I have seen architectural adventurers in these alien fields lose their shirts—with not a pang of pity.

Men have not been wanting who, by word and deed and their private avenues of publicity, have tried to identify the architect, a professional man, with the contractor, a business man, and with the building business—oh, of course as Leader! The result of their talk and acts has been to

make the public confuse architecture, a profession, with building, which is a business. I admire and respect the builder immensely. He is a business man and a good one as a rule. And he minds his own business and doesn't pretend to be something else—an architect for instance. Is it any wonder that the profession has lost influence, lost face, in this confusion of identity and function?

Men who ought to have known better have wasted untold time and effort on a code for architects tied in with the building industry. We need no Code but our own well-tried Code of Professional Conduct. But this mistaken endeavor, aside from its patriotic aspect, I believe to be one of the results of a definite attempt by certain "leaders of the profession" to submerge our profession in the building business. The idea is merely the product of the kind of mind we others have permitted to get control of the Societies. There will be those to fly to their defense and prove to their own satisfaction that the architect is only a part of that business—and they will call it an "industry" to dress it up. Well, the architect is not! He belongs to a profession, not to a business. He is only connected with that business by his position as director of the works and arbiter in building operations. The building business is run for profit like any other business. The profession of architecture is run for professional service and advice on a par with that rendered by the physician. How long do you think a doctor would hold the confidence and esteem of the public if he were known to be in the drug business also? And how many such instances would suffice to destroy all confidence in his entire profession? And suppose he had been trying with others of his kind to persuade the public that although he is a simon-pure professional man he is also a first class merchant dealing in drugs?

Now, Misters-the-hair-splitters, you may call this too sweeping or too narrow and so on and on and on. But I am not interested at this crisis in shades or qualificatory phrases. I am trying to arouse the members of what is of right a great profession to a sense of their personal responsibilities and to pernicious trends and doctrines that will utterly destroy it if they do not rise and act.

Members of the American Institute of Architects should see to it, in Chapter and in National body, that only professionally minded men who will fight for architecture as a profession are intrusted with the inception and direction of policies. The great issue of the hour is the rehabilitation of the profession. Useless to discuss how to get jobs out of the Government until we restore the confidence and respect of the public in us as professional men, not as some kind of hybrid whose proper place would be in a dime museum along with the rooster that barks like a dog. Restore the profession to the standing, dignity, confidence, and respect it once enjoyed before you try to get something from a Government that evidently has nothing but contempt for you.

There is a feeling in some quarters that, because we are numerically weak and are therefore negligible politically, our only hope of being heard is to identify ourselves with the thousands in the building trades. That is the usual fallacy of the American obsessed with quantity instead of quality. Turn your eyes toward Quality. Elihu Root is only one man with one vote and a rather weak and reedy voice—but when he speaks men listen closely, not to lose one word that comes from that brain; he is a man of quality and commands respect and attention *for what he is*. We may be few—but we can be strong by our mere quality.

What are you going to do about it? YOU! What do you say to an Architects' Professional League, pledged to restore the profession to its proper dignity and standing?

GARDEN VIEW OF A SOUTHERN CALIFORNIA HOME

HISTORIC AMERICAN BUILDINGS SURVEY

NATIONAL PARK SERVICE
U. S. DEPARTMENT OF THE INTERIOR

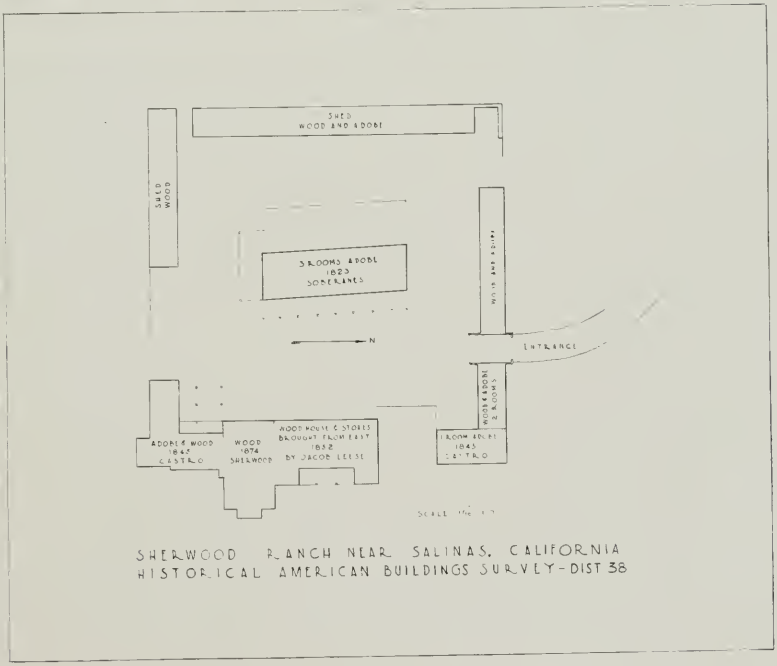
DISTRICT NO. 38
IRVING F. MORROW
DISTRICT OFFICER

Portfolio No. Seven—The Shirwood Ranch, near Salinas

ENTRANCE, SHERWOOD RANCH,
NEAR SALINAS, CALIFORNIA

PICTURE AT THE RIGHT SHOWS ENTRANCE FROM APPROACH ROAD TO SHERWOOD RANCH, NEAR SALINAS, MONTEREY CO. THIS IS PROBABLY THE ONLY ENCLOSED RANCH GROUP REMAINING IN NORTHERN CALIFORNIA. ITS CONSTRUCTION COVERS A CONSIDERABLE PERIOD DATING FROM 1823 TO 1874.

BLOCK PLAN, SHERWOOD RANCH, NEAR SALINAS. IN GENERAL ARRANGEMENT AND CONCEPTION THE BUILDINGS RESEMBLE THE WELL KNOWN ENCLOSED FARM GROUP OF NORMANDY, ITALY & SPAIN.



SHERWOOD RANCH NEAR SALINAS, CALIFORNIA
HISTORICAL AMERICAN BUILDINGS SURVEY - DIST 38

OPPOSITE PAGE, INCLOSED COURT YARD, LOOKING SOUTH TOWARDS THE ENTRANCE TO SHERWOOD RANCH. THE TWO STORY BUILDING IN THE CENTER OF THE RIGHT HAND SIDE WAS BROUGHT FROM THE EAST IN 1852 BY JACOB LEESE. THE GABLED BUILDING ADJOINING WAS BUILT BY SHERWOOD IN 1874. THE LOWER PICTURE SHOWS THE ENTRANCE TO SHERWOOD RANCH VIEWED FROM THE INTERIOR COURT. THE BUILDINGS FLANKING THE ENTRANCE ARE WOOD AND ADOBE. THE ONE STORY ADOBE ON THE RETURN WALL WAS BUILT BY CASTRO ABOUT 1845.

THE PICTURE AT THE TOP OF PAGE 40 SHOWS THE OLDEST UNIT OF THE SHERWOOD RANCH, AN ADOBE, BUILT BY SOBERANES IN 1823. BELOW, ON THE SAME PAGE, IS A VIEW OF THE RANCH FROM THE EXTERIOR ON THE EAST. FIRST UNIT, ADOBE, BUILT BY CASTOR ABOUT 1845; SECOND UNIT (GABLED) WOOD, BUILT BY SHERWOOD IN 1874; THIRD UNIT, WOOD, BROUGHT FROM EAST BY JACOB LEESE IN 1852.

Astray In Europe

by Nathaniel Blaisdell

ON going abroad it is well to know how to go, the better to enjoy the worth-while and to be free of uncertainty, nervousness and fear as well as keeping from getting lost, bewildered or confused and to overcome, once for all, the dread of customs officers. Passing the customs is the easiest thing in the world except in the United States, where petty officialdom is curt and suspicious, wholy un-American and mostly "foreign."

Almost everywhere in Europe American is spoken and in some places English though as English it is often queerly original; for instance: A guide in Greece who, commenting on the long, dry summer, imparted the information that "it had not rained in Athens before six weeks."

A slight knowledge of a foreign language is useful but not essential. It is wonderful how far a few words of French or Italian will carry the tourist in the romance countries and it is a joy to see how hard the natives try to get his meaning and to offer him everything but what he wants and how grieved they are when they cannot fill his order.

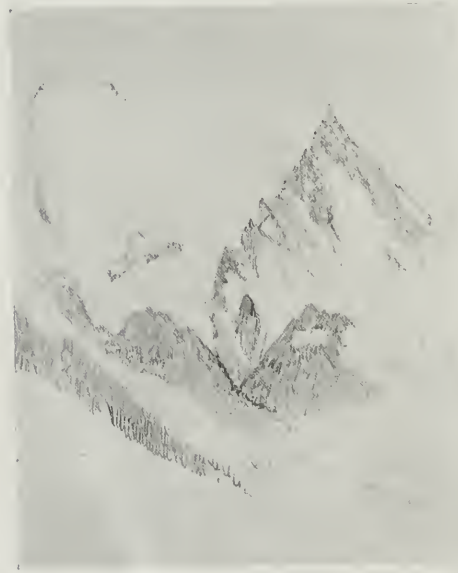
THIS QUAINT DECORATION ON THE PALAZZO DORIA MADE FRIENDLY PORTALS

Fortunately one language is universal, that of the lead pencil. Needing a cork screw in Paris and entering a *quincaillerie*, which he thought must be a hardware store because of the array of tools in its windows, the stranger asked the smiling salesman if he spoke English. He was desolated that he could not, nor could

SUCH CROSS-WINGED BARGES MAY HAVE BEGUILED THE PRISONER OF CHILLON

the other employes, not even the boss. Drawing the outline of a bottle on a bit of wrapping paper with the cork slightly protruding and a wriggly line down to it, and a cross line above, a fine big corkscrew was immediately produced, but indicating that it could not be pocketed readily, they exclaimed in chorus: *"Ah! un tire-bouchon pour la poche."*

"Oui. M'sieur," and a nice little shiny folding implement complete with screw, beer capper and wire cutter was purchased and the episode ended with everybody happy and the cause of international good will greatly advanced!



WHAT COULD BE BLANKER THAN THE CRAGS OF MOUNT BLANC?

In Lausanne a street urchin, looking over the sketcher's shoulder, told his following that *l'etranger* had been in Thonon-les-Bains the day before.

* * *

Long before the grateful Genovese "Mount-Vernonized" Andrea Doria as "the father of his country" and built him a huge palace down by the railroad yards (not that there were any freight yards in Andrew's day. Columbus had not yet stumbled on America and the Grand Central Station's Oyster-bar was a figment of an architect's imagination to be realized five centuries hence) the Dorias had taken Piazza San Matteo for their own and these "F. F. V.'s" of their time and town had built their palaces on three sides of the little square while a small church dedicated to St. Andrew and filled with tombs and trophies of the family occupied the fourth side.

These palaces were faced with alternate bands of black and yellowish white marble, while the portals are moulded, enriched and quaintly carved as though a Nicolo Pisano or a Desiderio da Settignano had lavished his art on them. The entrance to Andrea's more or less modest home is shown in the illustration.

* * *

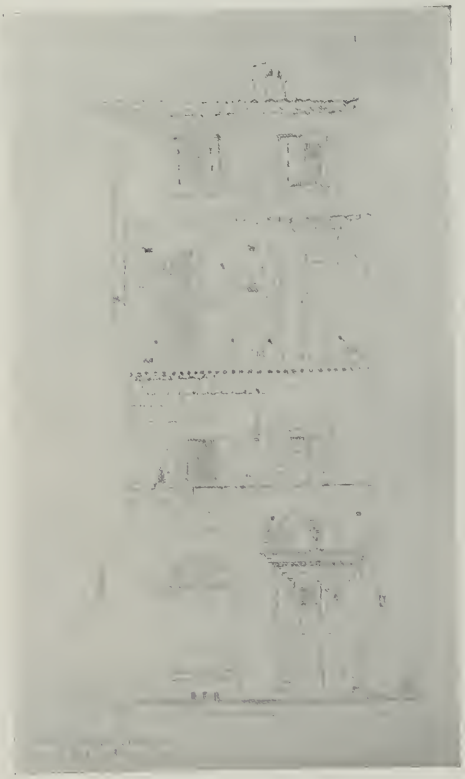
The Florentines have a unique way of their own in varying offtimes the material in their street fronts, using cut-stone in the first story, pitch-face ashlar in the second, rubble in the third and stucco in the top story, for well they know that nothing takes the shadow far flung from the corbelled-out wide-projecting tile eaves like stucco.

It may never be known who the first settlers of Alcudia in Mallorca were and it is not certain whether the Phoenicians or the Greeks were the second possessors of this beautiful location. Perhaps these two races, always vying for control of the Mediterranean, held the town alternately. No doubt, the Carthagenians were a factor and Hannibal or Hamilcar may have walked its ways, but in her turn Rome made it the capital of the island, a city of the first importance, walled it, surrounded it with a moat, and building an outer wall to make the moat doubly effective and, as always, at some distance outside the city, built a theater up on the hillside, of which nothing remains save the paved stone ranges for the seats and the view down the well cultivated country side on over the city to the deep, blue sea, beautiful in the extreme! Then for nearly five centuries the Arabs held it only to be dispossessed by Jaime the Conquistador in 1229, and after suffering its share of massacres, tortures, atrocities and pillage Alcudia settled down to a dream of peace that not even the World War disturbed. In these days the outer wall is mostly wrecked, the dry moat is used by the children as a play ground and the inner wall is shot full of holes through one of which a street of the city may be seen.

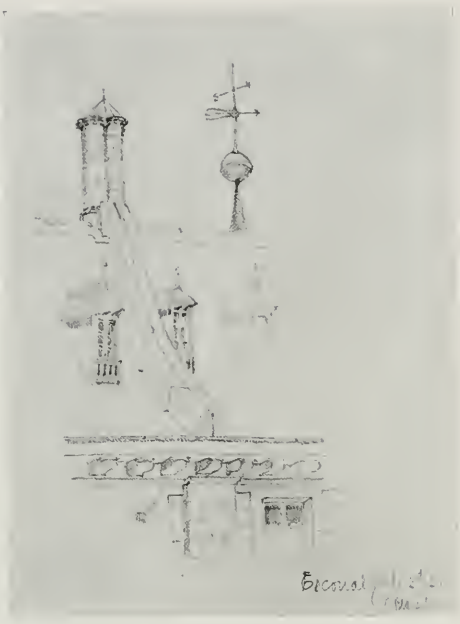
* * *

When Philip II built the Escorial he put his gloom, severity and chill into every stone that composed its fabric, but he could not insure against the ravages of time. Time has softened its walls and weathering has tinged the cold gray granite with tones that warm its coldness and excuse its harshness. Its chimney-tops are rounded and banded with varying hues and so attract storks that each stack has a pointed grille of fine wrought bars to discourage their nesting. However, one old monk of

ALCUDIA.—A PLEASING NAME FOR A PLEASANT PLACE



CLEVERLY MIXED MASONRY MARKS MANY A HOUSE IN FLORENCE



ESCORIALETTES ON ESCORIAL'S
CHIMNEYS EXCORIATE STORKS

St. Francis-like sympathy has left the topping of his flues free and a family of storks has claimed it for its own, and year in and year out defy all laws of celibacy and raise a brood of hungry-mouthed, gawky-legged fledglings.

* * *

Mt. Blanc is well named, for where it is white it is dazzling white contrasted with the blackest of blacks of its rock structure and when, on rare occasions at Geneva, it is visible in the late afternoon light from the Beau Rivage, it is a rosy mass floating afar off in the azure sky.

* * *

Montreux is one of the beauty spots of the world and when a double-winged bird-like boat happens to head for the strait between its wooded point and the just-off-shore island an unforgettable picture results.

* * *

One can never get enough of the skyline of Paris, particularly of Old Paris, and under the shelter of the arches of Pont Neuf from the far side of the Seine is a favorite place to paint it, sketch it, study it and muse upon its history and traditions.

* * *

The Lion of St. Mark is a perpetual calendar, or rather a universal history of the conquests and acquisitions of the Republic of Venice in northern Italy and up and down the Adriatic. He is always shown with his book in which he keeps his records or more probably his accounts, for the Venetians were "strictly business." When Venice is at peace the book is always open, as shown on the facade of the Doges' Palace. When Venice is at war the book

NOW THE LIONS OF THE DOGES DODGE
THE EMBLEMS OF MUSSOLINI

is closed and tightly held down by the lion's clenched fist as the winged lion does that stands aloft on the left one of that historic pair of columns on the *molo* at the water front of the piazzetta. Taking a hint from the lion's book here closeth the account.

Business Better

An NHA Survey

ONE of the most comprehensive surveys of the National Housing Act yet to be made has recently been completed by Wolcott & Holcomb, Inc., advertising counsellors of Boston, Mass. The purpose of the survey was to disclose as accurately as possible the beneficial results of the Act to date and its probable future progress. That the information might be as diversified as possible inquiries were sent to a wide range of informants, including advertising agencies, NRA regional directors, newspapers and trade papers, chambers of commerce and miscellaneous sources, checking one against the other. In addition to state and regional reports, the following cities were covered individually: Boston, Albany, Syracuse, Rochester, New York, Philadelphia, Baltimore, Pittsburgh, Atlanta, Jacksonville, Nashville, Cleveland, Detroit, Chicago, Denver, Omaha, San Antonio, Oakland, Los Angeles and San Francisco.

Highlights of the survey indicate::

Really excellent progress made by the NHA after two months operation.

Increasing cooperation of banks.

Need for much stronger NHA publicity and information to home owners.

Need for more active dealer cooperation.

Need for stronger local NHA organization.

Development of house-to-house convassing.

Anticipation of alteration business starting soon after the first of the year.

Anticipation of new building under Title II of NHA starting next spring.

Following is part of the data secured from the survey:

General public reaction to the NHA—excellent 10 per cent, good 60 per cent, improving 10, indifferent 15, and poor 5 per cent.

When actual progress being made is checked against this, the same territories report:

Excellent 15 per cent, good 45 per cent, indifferent 30, and poor 10 per cent.

These two comparisons check out reasonably alike, with the obvious indication that the plan is not yet meeting the expectation of those chiefly concerned with its benefits.

Cooperation of Banks:

Banks are cooperating 90 per cent, banks are not cooperating 10 per cent. Thirty per cent that report "Yes" qualify their answers by saying the banks are cooperating without enthusiasm, unwillingly or under cover. Reasons for non-cooperation do not seem serious. Some say their banks

expect to cooperate soon. A common objection is that the banks are not equipped to handle this kind of loan because of their set-up or legal restrictions. Some say their banks do not yet thoroughly understand or appreciate the NHA.

Loans Approved by Banks:

Seventy per cent report banks approving from 50 to 90 per cent of applications, 30 per cent report 10 to 45 per cent approvals, 61 per cent is the average.

In every case it is noted that a much higher percentage of loans is being approved than in the first few weeks of NHA operation. This is due partly to the increasing desire of the banks to "play ball" and partly to the better character of loan applications being received. One city reports that all loans are first put up to a chamber of commerce group, which rejects about 75 per cent of the applications. Ninety per cent of those passed on to the banks are then approved by the latter.

The picture varies widely from one territory to another. Atlanta, for instance, reports 75 per cent of applications turned down and only 300 loans made (for about $100,000) through October 15, while Pittsburgh reports that one bank alone has had 300 applications and approved a substantial proportion of them.

Are Other Financial Agencies Making NHA Loans?

Yes, 90 per cent; no, 10 per cent.

The Morris Plan Banks are mentioned in nearly every case as aggressively going after NHA loans. Other financial agencies mentioned are building and loan associations, personal finance houses and the finance plans of building material or equipment manufacturers revamped to NHA regulations.

Only 20 per cent of the loans are estimated as being made by these agencies compared to 80 per cent made by the banks. Some of the largest equipment or material manufacturers have been very successful in getting business through their own finance plans(heating, plumbing and roofing concerns particularly) but in general the banks are getting most of the business.

It is interesting to note that for each NHA loan, several similar projects are put through with cash. Of the $1,000,000 spent in Boston for alterations between August 11 and October 16 less than 10 per cent was borrowed. In Chicago five out of six who are modernizing their homes do not require loans. A roofing company reports money has been borrowed in some territories for only one out of 20 jobs. This ratio of an estimated average of six to one makes the repair and alteration total much higher than is shown by the NHA statistics.

How Aggressive Are Local Dealers and Contractors?

General activity, 60 per cent; limited activity, 30 per cent; no activity, 10 per cent.

We believe these figures are misleading if taken to represent attitude of the building trades. One dealer or contractor who is enthusiastic and aggressive gets into the limelight while 10 who do little or nothing are overlooked. The true situation seems to be that in nearly every community a few dealers and contractors are actively promoting the NHA while the great majority are still not alive to its possibilities. One publisher of a national trade paper going to lumber dealers says: "Many of our readers are heading up campaigns in their communities and are cooperating in every way possible with the housing officials." It is evident that continuous effort must be made to sell and resell the building trades on the NHA. Many who were interested

at the start expected a landslide of business—when it failed to materialize promptly, they became discouraged.

Are Home Owners Being Canvassed?

Yes, 66 per cent; not yet, but soon, 10 per cent; in a small way, 8 per cent; no, 16 per cent.

The spread of house-to-house canvassing is one of the most interesting developments of the NHA. Eighty per cent report this is being done by FERA workers, 20 per cent by building trades associations, dealers and contractors. Commercial fact-finding organizations have done a limited amount of house-to-house canvassing, but the expense and duplication with the community drive survey makes their "plus" of better information of doubtful value. In one large mid-western city, for instance, the house-to-house canvassing is done by FERA women workers who turn up one prospect for every six calls. These prospects are in turn called on by a sales promotion group of trained men formed under the auspices of the building trades. These salesmen close better than 50 per cent of their prospects, selling them something or other. This is an excellent sales percentage for almost any set-up and indicates the value of organizing the local hunt for prospects.

Detroit is planning to put between 1500 and 2500 persons on the welfare rolls on this work. In San Francisco, a house-to-house drive in 10 days resulted in reaching $3,500,000 of the $7,000,000 goal set up for NHA work.

Thirty per cent report excellent results from house-to-house canvassing; 40 per cent, good; 30 per cent, unknown.

In many cases those that report unknown results say the survey has not been operating long enough to judge results. In no case is this home-owner survey reported as a failure.

Drawbacks to NHA as Now Set Up:

Fifteen per cent report no major drawbacks, 38 per cent report difficulty is with the public, 12 per cent report difficulty is with the NHA, 10 per cent report difficulty is with the banks, 5 per cent report difficulty is with building trades.

Reasons given concerning public are:

—Unwillingness or inability of public to borrow (by far the largest single factor).

—Lack of information by home owners (do not clearly differentiate between NHA and HOLC, PWA, slum clearance, mass housing, etc.—do not know where to go for information or loans—not yet aroused to benefits, etc.).

Difficulties inherent with the NHA are reported as the late start, the slow organization, the lack of local leaders who can put in the necessary time, credit restrictions and interest rate.

Snubbing of progress by banks lies with non-cooperation, by the building trades with inertia—both previously discussed.

Will Title II Result in Considerable New Building?

The answer is 100 per cent yes. Ninety per cent believe new building will start on an increased scale this coming spring, 10 per cent believe it will start late in 1935 or early in 1936. The estimate of amount varies from "definitely more—don't know how much" to "three times as much in 1936 as in 1934, three times that in 1936 and a 10-year boom following."

While this last may seem over optimistic it would still be considerably under our normal annual requirements for new homes.

Are You Getting More Business Through the NHA?

Publishers—Yes, 57 per cent; no, 43 per cent.

Building Material or Equipment Manufacturers—Yes, substantially, 25 per cent; yes, slight increase, 27 per cent; no, 48 per cent.

Manufacturers report unusually good reaction from their salesmen and dealers—from hopeful to enthusiastic. NHA business varied so according to the strength of the manufacturers in different sections of the country, the seasonability of product and other factors that we are not able to give territorial comparison of NHA sales activity. Indications from this source show the Central West and Coast are most cooperative in NHA work—the Atlantic Coast least cooperative. It is very definitely shown that the NHA is functioning much more successfully in the small to medium large cities and metropolitan suburbs than in the agricultural districts and largest metropolitan centers.

Conclusions

While actual results to date fall far short of the anticipated and potential volume of repair and alteration work, practically all territories are optimistic and hopeful for the future development of the NHA. In only two cities was the NHA reported as slowing up—the others look for continued steady progress.

This survey shows that the NHA is moving ahead on all fronts. Some changes (such as tax and mortgage payment requirements) have already been made—others will no doubt take place as they become necessary to insure the complete development. Stronger organization is needed all along the NHA line, starting perhaps with combining all Federal building functions in Washington under a single head and going right down to the local chairman of the small town NHA committee. The first burst of publicity must be followed by a sustained barrage—the public and trade are still a long way from being sold. Banks are increasingly in the picture—their present cooperation is in itself a major accomplishment for the Administration. New building under Title II is being planned on an increasingly wider scale, stimulated by President Roosevelt's recent announcement of a 5 per cent interest rate and early completion of Title II provisions and the formation of mortgage companies. Next spring should see repairs and alterations under Title I fully under way and new home building under Title II getting started as soon as the ground can be excavated.

It is too much to expect to jump back in one year to 1928 building figures, but the data compiled from the countryside survey gives every indication that the NHA will make 1935 a banner year for the building industry.

Spanish House

MR. E. S. HUDSON'S house is situated on a sloping lot in Baywood Park, San Mateo. The style is early California. Because of the unusual contour of the site the home was designed with four different floor levels. Each level is one-half story above the other.

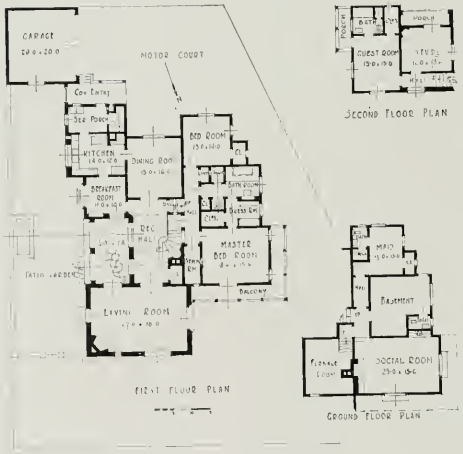
The front entrance is through a moulded mahogany door to a spacious reception hall, with a hand wrought iron staircase and large window overlooking the patio. The floor and stairs are hand-made tile.

Passing beneath an attractive archway the living room reflects the atmosphere of homeyness and comfort. A fireplace of selected Sonoma stone blends nicely with the Van Dyke brown walls and oak plank floors. The dining room ceiling is richly panelled in mahogany. The breakfast room, facing the east, has a large bay window overlooking the patio garden.

PATIO, HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO
Chester H. Treichel, Architect

Going up one-half story to the upper hall one enters the master bedroom with dressing rooms and bath. A guest room and sewing room are also on this level. Continuing up another half story is a second guest room and bath and an attractive den finished with knotty pine walls and ceiling. All bedrooms and den open onto balconies overlooking the well landscap-

HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO, CALIFORNIA
Chester T. Treichel, Architect



PLANS, HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO, CALIFORNIA
Chester H. Treichel, Architect

ed gardens.

From the reception hall one goes down a few steps to the game room, where there is a complete bar and cosy fireplace. The servants' quarters are also on this level.

All the lighting fixtures are especially designed and hand made. The general exposure has been considered for all rooms thereby gaining a maximum of sunlight as well as view.

The front lawn is banked away from a wall of native stone. A winding stone stair and walk leads through a covered wrought iron gate into a patio garden where shrubs and flower beds thrive in simple but beautiful informality. A large covered loggia faces the patio. Protected from the prevailing winds it makes an ideal setting for afternoon teas.

RECEPTION HALL, HOUSE OF MR. AND MRS. E. S. HUDSON, SAN MATEO, CALIFORNIA

CHESTER H. TREICHEL, ARCHITECT

Termite Remedies

Ounce of Prevention, Etc.

by A. A. Brown

TO architects and engineers entrusted with the design and supervision of buildings, termite control is an economic problem that has more than one significant aspect. First, and most important, is to preserve the collateral value of these properties. Second, to avoid the costly necessity of having to build into relatively new structures features, the need of which was apparent when the building was constructed. Third, in adopting methods to preserve property against termites it is essential to avoid the use of those materials which may create a hazard to health. Four, and economically important to us on the Pacific Coast, is the preservation of a flourishing lumber business, the operation of which may be seriously threatened by the adoption of wood substitutes not subject to the ravages of termites.

The destructive activities of termites places a new responsibility upon architects and engineers responsible for the design of structures containing cellulose. A farm employee, recently injured by the collapse of a water tower, sought damages from the owner. A San Jose jurist, early in November, in handing down his decision, held that the owner "can't be liable for the work of termites which he is unable to observe." With widespread knowledge that termites are to be found in a given community, it is likely to present a serious obstacle to a defense claiming ignorance of the hazard created by these wood destroying insects.

The owner of a structure, frequently, is not aware of the presence of termites until they have done considerable damage. See Figure 1 and Figure 2. During the months of October and November termites have been swarming in the San Francisco metropolitan area in large numbers. This is the season for mating and the establishment of new colonies. Swarming from these new colonies, now being created, even under highly favorable conditions, cannot be expected before 1937 or 1938 at the earliest. Thus their presence is likely to pass unnoticed until a numerically large colony has developed. When termites are found to be present during

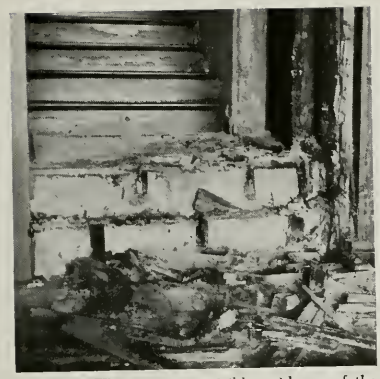


Fig. 1—There was no visible evidence of the presence of termites until the floor in the foreground was punctured by a high heel.

Fig. 2—The floor and stairs shown in Fig. 1 were found to have been gutted by these pests

swarming it is well to remember that they are coming from an old infestation. Once having left the original colony the new reproductives have no choice but to mate and establish a new one or perish as they will not be permitted to return to their former abode.

The presence of these insects is often disclosed when a heavy piece of furniture is moved into a room. A piano may crash through a floor into a basement revealing a greatly weakened structure or as in the case of the water tower, when subjected to unusual wind stresses it collapsed. Termites may impair the structural strength of a member but are skillful in not causing its failure under normal load conditions. It may be that they can feel with their jaws the stresses present, but when an additional load is added, the failure occurs. Structures gutted by these pests are a hazard, not only to the owners, but the public as well.

Figure 3 is an example of the hazard to new structures erected near old established colonies of termites. In the short space of four months, after completion, this home was being gutted. Termites are attracted to fragrant new-cut lumber. For this reason a new building presents a greater risk to the owner than an old one containing thoroughly seasoned lumber. It is important therefore in planning a new building to remove all old sources of infestation and adopt measures designed to prevent their entrance into the building. Subterranean termites are known to construct galleries under ground for distances as great as 150 feet from their nests in the earth to the source of food supply in a building.

The property owner is not only confronted with the probability that large repair bills will be forthcoming, but also with personal and public liability should cases of injury occur. It is no simple problem to rid a structure of these pests and prevent a reoccurrence. In a large percentage of such cases the remedy applied proves inadequate and termites promptly renew their attack. The methods and materials being used to eradicate these pests are legion. Some processes are effective while others offer no protection whatever. One such "expert" is selling to the public a salt water spray treatment, which is 100 per cent worthless. Another "expert," after replacing a large quantity of infected foundation

timber with new material, hot coated it with asphalt. The asphalt not only sealed off ventilation thus creating conditions favorable to rot but the asphalt itself is not toxic to these insects. Some termite control methods create conditions more dangerous than the original.

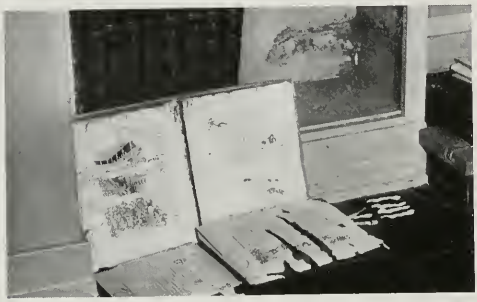


Fig. 3—The hazard in building an unprotected structure near a termite colony is very real. Within four months after his home was completed this damage was done.

Arsenic Gas

I recently saw a home in which the entire under structure as well as the soil had been sprayed with an arsenic solution. The owner has placed printed signs setting forth that the woodwork is poisoned with arsenic, also that the soil under the house and that next to the house on the outside of the foundation wall has also been poisoned. Children are warned not to come near. There is no assurance that the signs will remain permanently in place or that children will understand the warning or heed the request to keep away any more than the average child obeys "keep off the grass" signs. Then again very few users of arsenic take the trouble to note its presence. This indiscriminate use of arsenic presents a real health hazard. A poisonous arsine gas may be produced by fungi from the soil or by fungi introduced by termites and an even greater hazard is created when wood containing arsenic is burned either as debris or in a conflagration. The effect of fire on arsenicals is to produce a poisonous gas.

A number of building materials in common use are given an arsenical treatment. The quantity of arsenic used in these preservative treatments is relatively large. In dormitories, apartment and hotel buildings, the danger to human life, at times of fire, should be apparent to all. The risk applies not only to occupants but to firemen as well. A building known to present such hazards to life can be expected to occupy a prejudicial position as to occupancy. The indiscriminate use of arsenic compounds as a method of combating termites is of recent origin. Mandatory legislation may adversely effect property values where such buildings have been constructed containing arsenic treated materials without regard to its hazard to human life. Other and better materials are available which present no risk to human life, it remains only for their use to be made manditory and the use of poisonous materials prohibited.

That some form of protection should be required against the ravages of these insects can no longer be debated, Fig. 4. A recent letter from a regional office of the Home Owners Loan Corporation says in part: "In our work we are encountering much destruction by termites, and are taking steps to see that all properties on which

Fig. 4—The collapse of the wall and entrance of this home showed it to have been gutted by termites

we make loans will be protected. This work will necessarily have to be done by commercial companies, and if you can make any suggestion that will help us along these lines, it will be greatly appreciated." Many banks and mortgage companies have requirements similar to the Home Owners Loan Corporation for making loans on buildings and for new construction they require the use of termite proof lumber in the under structure.

To make an existing structure termite proof is not only difficult but expensive as well. The Home Owners Loan Corporation referred to above requires that holes be drilled into the timbers and a preservative forced into the wood under pressure or some other equivalent method of impregnation that is equally effective. Repairs made in this way are effective but costly. More effective protection can be built into new buildings at a fractional cost of the repair bill. Taking bids on a $10,000 home an architect found that the added cost of using termite proofed lumber for plates, underpinning, posts, girders, joists and subfloor added approximately $180 to the cost of the job. This is, indeed, a nominal amount to pay for the added protection to the investment being made.

Specifications

It is suggested that the following provisions be added to specifications for new buildings where lumber is used for framing.

(1) Remove all stumps, roots or other wood to a depth of at least twelve (12) inches below the surface of the ground in the area to be occupied by the building.

(2) The top of every masonry and concrete foundation wall and pier which supports and is in contact with wood construction of any kind shall be not less than six (6) inches above the final grade level or finished surface of any ground adjacent thereto. Masonry or concrete foundation walls shall in all cases extend as high as the top of any adjacent concrete or masonry slab which is supported by either natural ground or earth fill.

(3) Floor joists shall have a clearance of not less than eighteen (18) inches between the bottom of the joists and the surface of the ground underneath. The ground underneath floor joists shall be leveled off so as to maintain a reasonably even surface under the entire area covered by the floor joists.

(4) All wood forms which have been used in placing concrete shall be removed from contact with the ground.

(5) The mudsills, caps, pier blocks, posts, cross-bridging, girders, first floor joists and tongue and groove or ship-lap sub-flooring sheathing and or siding to top

TERMITES

As if the country didn't have trouble enough, somebody has discovered we have a termite plague. It has nothing to do with the currency question, Muscle Shoals or bad banking. A termite is a bug.

* * *

The termite is a house-wrecking roach. It is a timber-chewing insect with an insatiable appetite for raw wood. It is a sort of combination house-swallowing flea, beam-eating ant and joist-chewing beetle.

* * *

It literally eats you out of house and home, and you don't know it until you notice you are standing in a pile of saw-dust.

* * *

The termite is never seen. It works under cover like a Washington lobbyist. It chews legs off chairs, eats door jambs, devours golf clubs and has been known to work on a bridge table so it would collapse under a grand slam.

* * *

The most dejected looking of all insects is a termite that has worked fifty or sixty years on an iron bed before discovering its error.

* * *

In New York termites got into a court-house and undermined the structure. Judging from some of the recent decisions, they probably got into the judges as well.

From the Chicago Daily News, September 1934

of sub-flooring and for the purpose of these specifications all lumber used in the underpinning up to and including the subfloor shall be pressure treated with an approved preservative. The kind of preservative and quantity per cubic foot of wood to be used in impregnating the timber shall be approved by the architect. The wood shall be treated by the empty cell pressure process in accordance with the best practice of the wood preserving industry. Whenever it is necessary to cut, notch, dap or frame treated lumber, such surfaces shall be thoroughly painted with the approved preservative. Any holes in the subfloor for the installation of pipes, conduits or ducts or knot holes shall be covered with a solid flange collar or sheet of non-corrosible metal, having a thickness not less than No. 20 standard gauge. Wood sleepers, joists, sub-flooring and attendant construction laid on concrete which is in contact with the earth shall be pressure treated lumber as specified above.

(6) Where timbers extend into masonry or concrete walls the ends of such members for not less than eighteen (18) inches shall be immersed in an approved preservative until the end penetration shall be not less than one (1) inch.

(7) The use in this building of any material treated with arsenic in any form or combination is positively prohibited.

(8) Before completion of the building, all loose and causual wood shall be removed by the contractor from direct contact with the ground. No waste wood shall be buried by the contractor in any fill or otherwise.

Preservatives

A building constructed in accordance with the above specifications will be adequately protected against termites from the soil. The derivatives of coal-tar have been the principal source of wood preservatives in the development of the wood preserving industry. Coal-tar creosote is still the most dependable preservative for use in protecting wood and its products. Progress has been made in refining crude creosote, removing the black color and improving its penetrating qualities.

Because of the necessity and demand for wood immune to wood borer attack dealers have made available lumber pressure treated with the refined creosote which retains the natural color of the wood and also lumber which has been impregnated with the crude creosote oil.

The White Pine Sash Company has announced an optional Prim-O-Tox treatment for their sash which prevents both decay and termite damage. The suppliers of building materials recognize the serious aspects of the termite problem and are making available to the designers of structures new products to meet this requirement.

It remains only for the architect or engineer to specify that these new products be used so that the new structures for which they are responsible will be secure from damage by wood destroying organisms.

Tunnel

by Fredrick Hamilton

A FLEET of auto trucks is playing an important role in the construction work on the Broadway low-level tunnel project, new traffic link between Alameda and Contra Costa counties, in California, now being speeded toward completion by the Six Companies, builders of the Boulder Dam.

This new gateway to the East Bay region, which will replace the old Tunnel Road, transforms Contra Costa county centers into suburbs of Oakland and brings the slopes of Diablo within easy commuting distance of the Ferry Building, will require excavation of more than a million cubic yards of rock and earth. A thousand tons of structural steel will be used, together with 2500 tons of reinforcing steel and 120,000 barrels of cement. More than 700,000 square yards of oiled macadam pavement, 8 inches thick, will be laid.

In the gigantic engineering task, to be completed in approximately 18 months, Ford V-8 trucks are performing herculean feats and attracting the attention of construction men and contractors throughout the country.

The new route, ultimately to become part of an Oakland-Stockton highway at least 10 miles shorter than the present Dublin Canyon Road, is up Temescal Canyon and through the heart of the Berkeley Hills.

Most interesting of the numerous engineering features of the project are the two one-way tunnels, each 3168 feet long, 25 feet wide and 34 feet high. The bores are 15 feet apart at the portals and separated by 100 feet in the center. The broad approaches are to have four traffic lanes.

Perfect ventilation is assured through an elaborate electric ventilating system. Eight huge fans, in reinforced concrete stations at the portals, will pump 1,500,000 cubic feet of air a minute and eight exhaust fans will pull out an equal amount of foul air.

Illumination in the tunnels will be furnished by powerful electric lights located every 1500 feet. Romaine W. Myers, consulting electrical engineer, has worked out light transition structures which will adjust the eye of the motorist to the difference between sunlight and artificial light at both portals.

The tunnels are to be concrete lined. Trucks, known as "batch wagons," are employed in transporting batches of dry mixed material from the mixing plant at Emeryville to the project, where water is added and the concrete is poured into the forms.

There are 11 boulevard and railroad stops on the 5-mile truck run, all calling for efficient brake action when a loaded truck

SPEED WORK ON HUGE CONTRA COSTA TUNNEL PROJECT
Here is a section of the Broadway low-level tunnel project, near Oakland, California, where a new traffic link between Alameda and Contra Costa Counties is being constructed, with two huge one-way tunnels, each 3,168 feet long

is rolling through city traffic like a passenger car. And there is a steep drop from the Tunnel Road to the project.

Numerous trucks also are in action on the actual project, hauling steel and cement. Others are piled high with timbers or are being used to haul gravel and cement down into the bed of Temescal creek, for the building of the spillway below the dam.

This big East Bay highway undertaking represents many years of planning by the Alameda-Contra Costa highway district. Cost of the Broadway low level tunnel project will be $3,683,931. Of this amount the PWA put up 30 per cent. The State of California contributed $300,000 and pledged $400,000 additional. The highway district issued $2,378,000 worth of bonds.

« « « « With the Architects » » » »

BRIDGE APPROACHES

Bids are scheduled to be received December 20 for reinforced concrete approaches to the San Francisco Bay Bridge on the San Francisco side at an estimated cost of $1,500,000, and in January for the south approach, towards Funston Avenue of the Golden Gate Bridge, estimated to cost $600,000. A little later bids for the Oakland and Berkeley approaches to the bay bridge will be received.

MARKET BUILDING

Chester H. Treichel, 696 Cleveland Avenue, Oakland, has completed drawings for a one-story Class C market for the Henslee Corporation, which has promoted and financed a number of similar structures throughout the state. The $12,000 building will be located on College Avenue, near Shafter, Oakland.

SCHOOL BUILDING

Plans have been completed by John Bakewell, Jr., George W. Kelham and Will P. Day, for a two-story and basement reinforced concrete school building at Fillmore and Chestnut Streets, San Francisco, to be known as the Marina Junior High School. Bids for the $800,000 structure are expected to be opened early in January.

OAKLAND BUILDING

A two-story and basement steel frame and concrete store and loft building is to be erected at Broadway and 13th Street, Oakland, from plans by H. A. Minton, Underwood Building, San Francisco. The owner is Charles Jorgensen and the estimated cost is $100,000.

COTTAGE AND STORE

Guy L. Brown, American Bank Building, Oakland, has completed plans for a one and one-half story frame and stucco cottage to be erected on the north side of East 21st Street, Oakland, for John Carlson; also three stores in East Oakland, for an unnamed client.

CASWELL COMPANY TO BUILD

The George W. Caswell Company will build a four-story reinforced concrete factory on the northeast corner of Harrison and Hawthorne Streets, San Francisco, from plans by Masten & Hurd, 233 Post Street, San Francisco. Segregated bids have been taken and work on the $150,000 structure is expected to start immediately.

TRANSFORMATION

[*From Pencil Points*]

THE ARCHITECT AND ENGINEER, San Francisco, illustrates in September some particularly hideous old buildings in Oakland which have been "modernized"; in these cases it seems to mean virtual reconstruction. One thing it positively means and that is the transformation of a lot of dreadful eyesores into buildings upon which the eye can dwell with varying degrees of pleasure.

DALY CITY SCHOOLS

Plans are being completed in the office of Albert F. Roller, Crocker First National Bank Building, San Francisco, for three frame school buildings at Daly City for which bonds amounting to $100,000 have been voted. Bids will be advertised about January 15th.

FARMHOUSE DWELLING

Clarence A. Tantau, Shreve Building, San Francisco, has completed working drawings and awarded a contract for a California style farmhouse of whitewashed brick in the Burlingame hills. Mrs. Sylvia Brownell is the owner.

SHASTA COUNTY SCHOOL

The MacArthur School District, Shasta County, will build a one-story timber construction school building, costing $15,000, from plans by O. A. Deichmann, architect, and Harold Hammill, structural engineer.

PERSONAL

The marriage is announced of Mrs. Margaret Budd Morton, society matron, and MARIO CORBETT, architect, of San Francisco.

ENGINEERS EXCURSION

Members of the San Francisco section, American Society of Civil Engineers, enjoyed a trip to the Bay Crossing Pipe Line Project, Wednesday, December 12th, as guests of the San Francisco Water Department, the American Concrete and Steel Pipe Company and the Western Pipe and Steel Company. Accompanied by guides, the group was able to witness the fabrication, cement wrapping and field - installation of the 66 inch diameter steel pipe and the fabrication and field installation of the 62 inch diameter concrete pipe. Pile driving operations for the trestle work, west of Newark, were also witnessed. Luncheon was served at the Newark plant of the Steel Pipe Company. The excursion committee was composed of T. J. Corwin, chairman; A. G. Darwin, C. A. Louenstein, H. C. Wood and J. G. Wright.

ALEX N. KNOX

Alexander N. Knox, architect, died suddenly November 13, at his home in Montrose, Los Angeles County, following an illness of but a few hours. Surviving are the widow, a 10-year old son, and a brother who lives in Sydney, Australia.

Mr. Knox was born 50 years ago in Edinburgh, Scotland, where he received his architectural training.

OFFICE BUILDING

G. N. Hilburn, architect of Modesto, is preparing plans for a one-story, reinforced concrete, Spanish style office building for the Farmers' Mutual Fire Insurance Company. Estimated cost is $10,000.

STORE BUILDING

A one-story, reinforced concrete store building will be erected on Lakeshore Avenue, Oakland, from plans by W. E. Schirmer. Russell Franck is the owner and David Nordstrom the builder.

ORINDA RESIDENCE

Plans have been completed by W. W. Wurster, 260 California Street, San Francisco, for an eight-room residence in Orinda for Garry Owen of Berkeley.

HOTEL ALTERATIONS

C. A. Meussdorffer, 101 Post Street, San Francisco, has prepared plans for alterations to the Grand Hotel at Turk and Taylor Streets, San Francisco.

CRYSTAL SPRINGS TEMPLE

Editor The Architect and Engineer:

May I have an opportunity to correct an erroneous footnote to my article in the November issue on the Crystal Springs Water Temple. The note should have read thusly: "The Pulgas Tunnel is the final link in a great aqueduct system, which includes the 25 mile Coast Range Tunnel, the longest tunnel bored by man. That it should be named Pulgas which is Spanish for 'flea' seems absurd."

The author would also like to take this opportunity to correct the impression prevalent, even among some of his brother architects, that the permanent structure would be a replica of this or any other known temple. I carefully noted that months of study would be required to perfect the idea. Considerable departure from this design is evident in early preliminary sketches, and what the ultimate structure would be depends largely on inspiration and study. Surely it should be self-evident that a speaker's platform is not part of the problem.

Charles G. Lundgren, Architect.

SOUTHERN CALIFORNIA CHAPTER

Re-election of incumbent officers featured the meeting of the Southern California Chapter, American Institute of Architects, held at the Engineers' Club in Los Angeles, November 13. Report of the nominating committee, read by A. M. Edelman, chairman, recommended the re-election of the following: Sumner Spaulding, president; Ralph C. Flewelling, vice-president; Eugene Weston, Jr., secretary; Leland F. Fuller, treasurer; Henry Carlton Newton, director for the three-year term.

Henry F. Withey, chairman of the committee on historical buildings, reported the survey of these structures is in its sixth week, 25 men are employed on the work, drafting is under way on 20 projects, and six buildings have been measured. Similar work is being carried on in 67 districts throughout the country, each district corresponding to the territory administered by the various Institute Chapters. Harold Burket is in charge of the Santa Barbara district and William P. Lodge is in charge of the San Diego district.

There have been no changes in the rules for employment, according to Mr. Withey, who is in charge of the Los Angeles district.

That the architects are taking an active interest in the better housing campaign, was indicated in reports made by Samuel E. Lunden, vice-chairman of the Chapter's housing committee, and Benjamin H. O'Connor, a member of the same committee. It was stated that the SERA has 100

men in the field who have already made 1000 visits in this district, out of which 138 people said they were interested in modernizing their homes, 18 contemplate new construction, 17 contemplate alterations and 14 contemplate additions. The SERA proposes the employment of 1000 men on this work eventually, from whom 1200 leads daily are expected. A motion was adopted whereby the architects will individually contribute to a fund, to which other interested bodies will subscribe, for the purpose of furthering the program and financing repairs to an old dwelling, which will be used as an example of modernizing. The publication of a booklet, for the purpose of educating the public as to the architects' purposes, is also proposed.

A communication from the Northern California Chapter, relative to the local Chapter's form of competition for design of public buildings, revealed that they have recommended to the American Institute of Architects that some form of competition be employed in the design of Federal building projects.

Carleton M. Winslow, introduced two new associate members: Sonke E. Sonnichsen and Benjamin H. O'Connor. Henry L. Gogerty, another new member, was unable to attend the meeting.

Dean A. C. Weatherhead of the College of Architecture, University of Southern California, explained the development of new courses at the college.

The speaker of the evening was Kem Weber, industrial designer, who exhibited some of his drawings.

Sumner Spaulding, president of the Chapter, presided at the meeting.

ARCHITECTS' SMALL HOUSE FEES

The lumber dealers of the Northwest met with the Spokane Society of Architects at a luncheon October 19, to discuss small house construction and professional fees for designing the same.

The secretary read a letter from the Spokane Better Housing Committee requesting that the society furnish architectural services on a house to be remodeled at W. 25 York Avenue. It was voted that the property be accepted on the terms set out in the letter and a committee consisting of Noel E. Thompson and Henry C. Bertelsen was appointed. The understanding is that any fees which accrue from the sale of the property are to be placed in the treasury.

H. C. Whitehouse introduced the topic for discussion by reading a tentative scale of rates to be charged for small house plans, the lumber company to furnish preliminary sketches if any.

Chas. Wood suggested that architectural work being done by carpenters should be done by architects who were qualified.

Mr. Bertelsen pointed out that in the past the architects had not furnished much better plans than the carpenters due to the low rate of pay. He felt that the architect's aim should be to better the services rendered and to improve domestic architecture in Spokane.

The guests were then asked to give their views from the selling standpoint. A number of helpful suggestions were made. Stanley Newton pointed out that his profession is not sold on the architectural service and the public feels that the fees are high. H. A. Shaw said he had always maintained that architectural services were cheap at any price and that supervision was better than plans to give the owner value received. He thought the city building department could be made to tighten up its requirements. H. O. Schumacher felt that an advanced program to sell architectural service would be a good thing. He said: "The lumberman wants to sell material—not plans."

GOLDEN GATE BRIDGE PROGRESS

Progress of the Golden Gate Bridge reached a new milestone on December 3 when forms were placed for the construction of the south pier—in the dry. The 65-foot-thick pier base embodies 48,000 cubic yards of concrete, reinforced with a network of steel.

From now on the pier shaft will be continued to an elevation of 44 feet above sea level by consecutive lifts of concrete reinforced with steel.

The eight inspection wells, providing access to the bottom of the Golden Gate through the concrete base and the first lifts of the pier shafts, are to remain open until the bridge engineers have been afforded the opportunity to make a thorough inspection of the rock bottom in the dry. They will then be filled with concrete and the balance of the pier shaft will be concreted, reaching completion on or before the first of January.

Meanwhile, according to the report of Chief Engineer Joseph B. Strauss, the concreting of the first section of the east weight block of the San Francisco cable anchorage is under way and forms for the east shaft of pylon S-2 back of Fort Winfield Scott, as well as the false work for the San Francisco cable housing, are being placed in position and lined up.

The huge erection crane or creeper truss has been removed from the Marin tower in readiness for use when the construction of the San Francisco tower commences shortly after the first of the year and work has been commenced on the top portal brace immediately below the cable saddles. Work also is progressing rapidly on the Presidio approach structure.

WHITE PINE SASH CO. TO MANUFACTURE DALMO WINDOWS

Arrangements have been completed whereby the White Pine Sash Co. of Spokane, Wash., reported to be the world's largest producers of white pine sash and frames, will manufacture and market nationally the awning-type windows developed for schools and other large buildings by the Dalmo Sales Corporation of San Francisco.

Dalmo windows, already in use in more than 1000 schools and other large buildings throughout the country, have heretofore been assembled at the job, but under the new arrangement the window frame and hardware will be sold as a unit—all fitting of hardware and sash being done at the factory.

The hardware is a recent development of the Dalmo Sales Corporation, being an improvement on their line. Operation of the new hardware is automatic. A new triple-sash all wood window can be opened simultaneously to any desired degree by motion of the lower sash, or the lower sash may be operated independently to control ventilation.

For the present, all manufacturing of sash and frames will be done at the Spokane plant of the White Pine Sash Co., but branch factories will be located at large consuming centers as fast as business warrants. Spokane is favorably situated from a manufacturing standpoint, being served by five transcontinental railroads. The city is surrounded by areas of virgin Ponderosa and Idaho white pine, from which the company draws its supplies of lumber. The newer districts of the Klamath Falls basin and Northern California are also drawn upon.

"While production of the new unit will be on a quantity basis, only precision methods of manufacture will be employed," said H. G. Klopp, president of the White Pine Sash Company. "Steel templates are used to check the machine work of the various parts as well as for locating screw holes. Much of the manufacturing will be done on special machines designed and built by our company.

"We feel that Dalmo hardware is the best obtainable for awning-type windows, and it will be the aim of our company to make the windows as near perfect as possible. Frames will be made with our patented weather-proofing wedge joint, and factory - installed weatherstripping will be available if desired. Another optional feature will be Prim-a-Tox impregnation to prevent rot and to repel termites. This treatment has been perfected by the White Pine Sash Company and is backed by our 25-year guarantee of satisfactory performance."

Both the White Pine Sash Co. and the Dalmo Sales Corporation are pioneers in their particular lines, and are well and favorably known to the trade. Each concern has had more than 20 years of manufacturing experience, and both express confidence that the new window unit has a definite place in the school and commercial building program.

GAS FOR DISTILLING PLANT

The most recent rectifying and distilling plant to be opened in the San Francisco bay area is that of Hiram Walker & Sons, Western, Inc., at 650 Second Street, San Francisco. A five story building has been completely reconstructed to house the plant and local offices of this organization, and to supply the Pacific Coast demands for its products. Equipment installed in the plant is modern in every detail, and nothing has been spared that would effect automatic and efficient operation.

The total capacity of the plant is 2,000 cases of liquor every eight-hour shift.

Steam requirements are fulfilled by a gas-fired boiler installation, fully automatic. The efficiency and low cost of this fuel have led to its adoption for steam generation in practically every liquor plant and brewery in the San Francisco bay area.

The plant consists of one 100 H.P. boiler, covered with 2 inches of magnesia insulation and gas fired. It is equipped with automatic damper and fuel control for the proportioning of air and gas

to insure efficient combustion. An automatic feed water control works in conjunction with a steam water pump. In addition to this equipment, an automatic water heater heats the water for bottle washing with steam generated by the boiler. All condensation from the stills is returned to the boiler for re-use.

KEEPING BUILDING COSTS DOWN

Problems of reducing building costs for America's Little House, demonstration home for America's average family of five, which Walter T. Murphy, Inc., has erected at Park Avenue and 39th Street for the New York Committee of Better Homes in America, are identical with those that must be solved by every owner who must erect his house today within the limits of a definite budget.

According to Roger H. Bullard who, with Clifford Wendehack, designed the Little House, about thirty percent has been saved the owner from the original cost estimates.

"Every house," said Mr. Bullard, "is necessarily the result of a series of compromises. You want a great many things in your proposed house, but you have only so much money to spend. How, then, can you give up as little as possible and still remain within the budgeted sum you have set aside for building?

"In planning the Little House, we wanted to design a home which families outside of New York could duplicate for approximately eight thousand dollars (more or less depending on the locality). But we felt that we must allow ourselves more than this amount for building this demonstration house in New York, since it would have to conform to the New York Building Code requirements, and since there would be excessive costs due to the existing foundations which require carrying the footings down approximately twelve feet to solid bearing. There was also the fact that we wanted to fit up our garage as a broadcasting studio.

"We began by planning for our house to contain nine rooms and to be built of 8 inch brick with a slate roof. We estimated it would contain 39,631 cubic feet, including a broadcasting studio. There would be a living room and dining room, totaling 36 feet in length, a kitchen, utility room, ample stairway and hall, on the first floor; three bedrooms (one a nursery) and two baths on the second floor; beside a full basement under the entire house, providing for a rumpus room, workshop, boiler room, and store room.

"But the cost was over our budget. We had to sit down immediately and revise some of our ideas.

"First we kept the same arrangement of plan, but decided to give up a brick exterior and erect a frame building with clapboard siding. This saved $1,190. We reduced the size of the cellar instead of excavating under the whole house. This saved $150. Planning for a shingle rather than a slate roof cut the cost for that item by $295. Substituting an open terrace at the kitchen door for a roofed porch saved $70, and omitting sliding trays in the closets saved $45 more.

"We had planned stock window frames and moldings in most cases, but by slight alterations in design, to allow for these in all cases, we cut our costs another $45.

"Slight changes in the grades of lumber specified — changes entirely consistent with the best materials commonly used in houses of this size and character—saved between $200 and $300 more. By these and other minor changes we cut a total of about $3,000 from our costs.

"But still the building figures were too high. We decided that we must save another $1,000, and that the only way to do it was to reduce the total cubic space in the house. We were resolved, however, not to give up any room (except in the basement where we had already made up our minds to do without the extra store room and the workshop) and not to reduce any particular room appreciably in size. It therefore became a matter of changes in design to eliminate every particle of waste space — actually to shrink the walls of our home and still, by economical planning, to have nearly the same amount of room for all practical purposes that we had to start with.

"First, we decided to do without the large hall with its winding stairway, and run the stair up from the living room instead. The hall could then be reduced in size and running the stairs between walls showed a decided saving in cost by eliminating the handrail and balustrade. This rearrangement also shortened the upstairs hall and allowed the bedrooms to interlock more economically.

"By slight changes in the design of our kitchen, utility room, and garage, we kept each as efficient as it had been at first, but also saved further cubic footage.

"When we had finished we found that we had succeeded in reducing the total depth of our house, from front to rear, from 61 feet to 51 feet, and its width from 38 feet to 35 feet. The slight lowering of the roof in proportion also helped in the reduction of the total cubic space to 30,376 feet from the original 39,361. The exterior of our house is not noticeably altered, nor is the feeling of the interior spaces. But this elimination of

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605 W. Tenth Street, Los Angeles

9,000 cubic feet—almost one-fourth of the house originally planned for—brought the final cost estimate down to a figure which assured our being able to duplicate this house for private living almost anywhere in the East (outside metropolitan areas) for approximately eight thousand dollars. In sections of the West and South, where labor and materials are cheaper the cost could be even lower."

Special technical experts are at work on the portion of the building which involves the broadcasting studio, and the Columbia Broadcasting System, which is financing the erection of the Little House for the New York Committee of Better Homes, has already begun broadcasting from their "garage studio". The entire house will be finished in October, and on completion will be opened to the public.

IMPROVE CAPITAL APPROACHES

The evolution of Washington from a "one-sided city" to a "balanced Capital" is urged by Francis P. Sullivan, Chairman of the Committee on the National Capital of the American Institute of Architects, as the goal to be sought in planning the development of the Capital City.

The original plan of the city, he points out, provided that the United States Capitol Building should be the center and focus of the city plan. The unregulated growth and spread of the city, through the course of generations, has destroyed this intended balance.

"The Capitol today actually faces away from the only avenue of approach which possesses any importance or dignity, so that the city's 'front door' has become its back door," says Mr. Sullivan.

"The broad open spaces and wide avenues lined with massive buildings which stretch westward from the Capitol contrast strikingly with the meanness and disorder which characterizes the areas lying along the northern, eastern, and southern axes of the City plan.

"Northward from the Capitol to the Soldier's Home extends a narrow congested street, crowded by street car tracks, bordered by insignificant buildings, and hideously dominated by the great red brick mass of the Government Printing Office. Eastward another street of mean proportions and indeterminate architectural treatment terminates in a jungle and a precipice.

"Southward, Delaware Avenue, South Capitol Street and New Jersey Avenue pass through a region of slums, warehouses and weed-covered vacancy, until one dies away in a jumble of streets before the entrance to the Army War College, another despairingly ends its career on

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Owing to the various crafts accepting the NRA code of fair competition, in some cases they have adopted a schedule of prices, and it therefore would be advisable to get in touch with these firms direct.
Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $35 to $40 per 1000 laid, (according to class of work).
Face, $75 to $90 per 1000 laid, according to class of work).
Brick Steps, using pressed brick, $1.10 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.75 sq. ft.
Common, f. o. b. cars, $15.00 job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126..00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots).

8x12x5½	$ 94.50
6x12x5 ½	73.50

Discount 5%.

Composition Floors — 18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month. following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b.) Job. S.F.) $2.90 per bbl.
Cement (f.o.b. Job, Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Medusa "White" .....$ 8.50 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place, exclusive of forms, 30c per cu. ft.
4-inch concrete basement floor.....12½c to 14c per sq. ft.
4½ inch Concrete Basement floor .....14½c to 16c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Meduca Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs. $75.00 per balcony, average.

Glass (consult with manufacturers)—
Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 75c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.
Note—Add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron. etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$35.00 per M
No. 2 common	28.00 per M
Selected O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	48.00 per M
1x4 No. 3 flooring VG	42.00 per M
1x6 No. 2 flooring VG	48.00 per M
1¼x4 and 6, No. 2 flooring	52.00 per M

Slash grain—

1x4 No. 2 flooring	$39.00 per M
1x4 No. 3 flooring	34.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ 1.00 per bdle.
Redwood, No. 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.		
1 1-16x2¼" T & G Maple	132.00 M ft.		
⅞x3½ sq. edge Maple	140.00 M ft.		
	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	

Laying & Finishing 13c ft. 11 ft. 10 ft.
Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—
O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.
Dining room cases, $7.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.
For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—
Two-coat work ..... 29c per yard
Three-coat work .....40c per yard
Cold Water Painting .....10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).
1 ton lots, 100 lb. kegs, net wt. 10¾c
500 lb. and less than 1 ton lots 11c
Less than 500 lb. lots.....11½c

Red Lead in Oil (in steel kegs)
1 ton lots, 100 lb. keg s,net. wt. 12½c
500 lb. and less than 1 ton lots 12½c
Less than 500 lb. lots.....13c
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior— Yard

2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish No. 18 gauge wire mesh	1.50
3 coats Medusa finish No. 18 gauge wire mesh	2.00
Wood lath, $5.50 per 1000.	
2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks, Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale .....$1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—
From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—
Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—
Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural
$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—
$85.00 per ton, set, (average).

Stone—
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts. corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile — Floor, Wainscot, Etc. — (See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE FOR 1933

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestor Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	8.00
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	$ 8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturdays (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

the river bank, and the third hurls itself hopelessly against the wire fence surrounding an immense factory which occupies the very site where L'Enfant visioned 'The Great Commercial Exchange and Its Attendant Buildings'.

"Railroad tracks ramble at will throughout the section. Over large areas freight is piled in the open. A siding, where the city's daily output of garbage is transferred from trucks to freight trains, is situated almost precisely south of the Capitol itself; and numerous chimney stacks, rising between the waterfront and the dome of the Capitol, interrupt what should be the most striking and effective vista of its graceful silhouette, and what, in spite of everything that has been done and not done, remains the most important and impressive approach to the Capital City.

"For many years past the efforts of all interested activities have been rightly concentrated on the effort to insure the complete and successful execution of the McMillan Commission's plans for the Mall area. This plan is now well on the way to completion, and there exists no uncertainty that in the course of time it will be completed to the final detail.

"It is appropriate, therefore, that the claim of the other principal axes of the city plan to be given an equivalent treatment, harmonious with the Mall, and of equal beauty and interest, should now be given serious consideration."

No immediate program of extravagant expenditure need be undertaken, according to Mr. Sullivan. "It has taken thirty years to bring the reconstruction of the Mall to its present stage of partial completion, and it may require many years and even generations to realize completely the ideal of having the approaches to the Capitol from every point of the compass harmonized and coordinated into a spacious and dignified whole," he explains. "It is, however, by no means too early to propose this eventual end, and to begin to work toward its accomplishment.

"The very existence of plans of this nature act as an encouragement to the gradual evolution of the areas which they cover along the desired lines of development, and stand as a protection against the encroachment of inharmonious structures.

"If the working out of the studies of the McMillan Commission had been postponed for ten or twenty years, it is probable that, in the meantime, so many buildings inconsistent in type and haphazard in arrangement, would have been constructed in the Mall area that the proper solution of the problem would have been found to be impossible.

"Until plans are prepared and adopted for East Capitol Street, North Capitol Street, and the area south of the Capitol, there is continual danger that new construction in these areas will seriously

Dear Mr. Architect:

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Cordially yours,

Pacific Coast Electrical Bureau

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DEPARTMENT J-12

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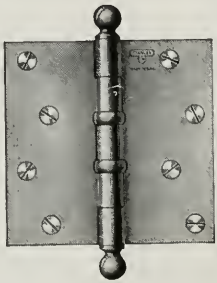

hamper their proper treatment in the future. While the complete fulfillment of any such plan may be a matter of the far distant future, it requires no great foresight to see that the utilization of the properties in these portions of the city as sites for buildings of a public or semi-public nature may not be a remote necessity.

"The blocks between the Mall and Pennsylvania Avenue, northwest, are rapidly being preempted and at the same time there is an increasing tendency for great national, professional, and industrial organizations to make their headquarters in the Capital City and to build permanent structures for that purpose.

"Such buildings as those of the National Academy of Science and the American Pharmaceutical Society contribute greatly to the beauty and architectural interest of Washington, and if assured of a suitable environment, many of these might be appropriately placed in proximity to the Folger Library, the New Supreme Court Building, and the other buildings forming the Capitol Group.

"As a preliminary step, it would at least be helpful to include the buildings hereafter to be built in these areas, under the provision of the Shipstead Act, so that the control of the Commission of the Fine Arts might be exercised over the type of architecture employed. It is to be hoped that the complete and thorough study required to develop a suitable plan for the approaches to the Capitol as a whole will not be long postponed."

TO STIMULATE BUILDING

Stimulation of housing activities throughout the country to aid recovery in the construction industry and provide employment, is the objective of various proposals now being considered by the Federal government. These proposals involve slum clearance and low cost housing projects in the larger cities, suburban low cost housing projects and individual home building.

Public Works Administrator Ickes is urging expansion of slum clearance and low cost housing program for which $150,000,000 has already been made available. A large number of these projects are now under way but the amount available will barely scratch the surface, according to Mr. Ickes.

Federal Housing Administrator Moffett has announced that PWA funds can now be obtained by cities for suburban low-cost housing projects on identical terms offered for public building construction. Cities may obtain an outright grant of 30 per cent of the ultimate cost of such a project but would be asked to furnish

security for the loan. Under a new plan, announced by Mr. Moffett, homes costing from $2500 to $3500 may be financed by private lending institutions with the government insuring the mortgages.

The latest housing proposal involving a direct 20 per cent grant to owners on homes financed by private capital is explained in the following dispatch sent out from Washington by the Associated Press:

"A direct subsidy plan for stimulating housing through which $1,000,000,000 of Federal funds would be used in an attempt to put $4,000,000,000 of private capital to work is receiving consideration in high administration quarters.

"The scheme being studied would have the government make a direct gift of 20 per cent of a housing project. The person receiving the subsidy then could obtain an 80 per cent loan on the remainder of the cost through the insurance guarantee method of the Housing Administration.

"An example of operation of the plan would be as follows: A man with a $500 lot wants to build a $5000 house on his property. The government, after investigation through Housing Administration machinery, would advance 20 per cent of the $5000 or $1000. With the insurance guarantee of the Housing Administration behind him, the borrower then could obtain from a bank or other lending agency a loan of 80 per cent. This would mean a loan of $3600, putting the remaining housing cost and value of the lot together for a total of $4500. This arrangement would require the borrower to put up only $400 in cash in addition to his lot.

"Supporters of the plan say this operation would not interfere with private fields of finance or real estate and would get away from the 100 per cent direction out of Washington which direct Federal building would entail.

"The 20 per cent subsidy was said to be enough to make up the difference between present rental levels and construction costs."

In Southern California, one million dollars has been set aside by the Federal Home Loan Bank for modernization of homes on which loans have been made by the HOLC, it is announced by M. M. Hurford, president of the bank in a bulletin to member institutions urging them to sign and return certificates of insurance to the Federal Housing Administration which offered to extend the benefits of insurance under Title I of the National Housing Act to additional loans made on homes financed by HOLC. The bulletin points out that these loans can be made either under the present trust deed or may be

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The $1,000,000 must be used for the express purpose of making these modernization and repair loans and will be advanced to the eligible building and loan institutions in the Twelfth District on a five-year amortized basis with interest charge to the institutions at 4 per cent.

FEDERAL BUILDING PROGRAM

The Federal government has allocated $5,310,290 for nineteen building projects in Northern California cities. The total includes four post office buildings financed from the special emergency construction appropriation of $65,000,000 made by the last Congress.

Three projects involving an expenditure of $3,007,740 are under contract, one of which is the San Francisco Federal Office Building, toward which $2,899,040 is allocated. The others on which contracts have just been let are the Pittsburg Post Office and Santa Clara Post Office Buildings.

Plans are reported complete for five other post office buildings, three of which are on the market for bids. The total appropriations for these five is $329,500.

Plans are being prepared for nine other buildings, among them the San Francisco Mint, which has an appropriation of $1,225,000 that may be increased by proceeds from sale of the old mint site. The total allotment to these nine buildings is $1,836,150.

Sites have been selected for Tracy and Woodland Post Office Buildings, but plans are still in a preliminary stage.

Private architects have been commissioned for only five of the buildings. Plans for the others are being drafted in the office of the Supervising Architect.

Following is a late progress report on all buildings in Northern California financed under the present program:

PROJECTS UNDER CONTRACT

*San Francisco Federal Office Building	$2,899,040
Pittsburg	68,200
Santa Clara	40,500
Total	$3,007,740

PLANS COMPLETED

Redwood City (Bids in)	$ 66,600
Turlock (Bids Jan. 7)	63,800

Hollister	45,100
*Hayward	89,000
Sebastopol (Bids Jan. 2)	65,000
Total	$ 329,500

PREPARING PLANS

*Lodi	$ 55,000
*Madera	50,600
*Redding	79,200
Roseville	45,100
*Salinas	83,600
San Francisco Mint	1,225,000
San Rafael	64,900
Santa Cruz	115,750
San Mateo	117,000
Total	$1,836,150

SITES SELECTED

Tracy	$ 67,000
Woodland	69,900
Total	$ 136,900
Total	$5,310,290

*Private Architect.

UNIVERSITY BUILDINGS

The Arizona legislature has authorized the acceptance of an $815,000 Public Works Administration loan for financing a number of improvements at the University of Arizona, Tucson. The building program comprises appropriations for new structures as follows: Science building and greenhouse, $300,000; auditorium, $130,000; liberal arts building, $85,000; women's building, $80,000; museum, $65,000; administration building, $40,000; infirmary, $30,000; R.O.T.C. stables, $17,500; stock barn, $9000; judging pavilion, $6500; duplex dwelling, $6300; water tower, $3600; dairy barn additions, $4100; office, $1500; hay and machinery shed, $1500. Buildings to be remodeled are: Science building, $11,000; auditorium, $6000; girls' gymnasium, $3000. Roy Place, 11 E. Pennington Street, Tucson, is the architect.

INSTITUTE DOCUMENT

A new Institute document, entitled "Standard Filing System for Architectural Plates and Articles," has lately been published. The document was developed by a special committee of which W. H. Tusler, of 104 South Ninth Street, Minneapolis, Minn., was chairman.

Mr. Tusler is carrying on some corespondence with various publications in the hope that some procedure may be developed which will encourage architects to file magazine plates and articles in a systematic fashion—as they appear.

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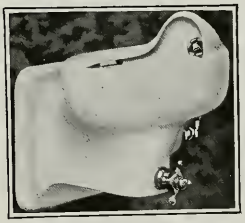

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SCALE PLANNING

In response to a growing public interest in the general field of large scale planning, the Board of Trustees of Cornell University has authorized the establishment in the near future of a special group of courses on this subject, to be offered to all students of the University. A grant from the Carnegie Corporation of New York will finance the project for a period of three years.

The Board also announced the appointment of Gilmore D. Clarke of New York as Professor of Regional Planning to supervise the new enterprise. Mr. Clarke is well known throughout the country as a consultant on many large scale developments.

While specialized courses have been established at other institutions, notably at Harvard and Massachusetts Institute of Technology, primarily for the training of city planners, the offering at Cornell will be in the nature of an experiment along new lines. The attempt will be made to develop an understanding of this important subject among students whose main interest lies outside the technical planning field.

This idea is based on the belief that actual accomplishment in large scale planning must rest on the cooperation of many diversely trained individuals united through an informed interest. While recognizing the importance of the specially trained city planner as a coordinator, the Cornell plan will attempt to present the idea of collective control of environment to as many students in as many different fields as possible, not as a matter of professional training, but as a supplement to their normal major interests. Such a course, it is felt, will assist rather than compete with the professional courses already in operation elsewhere.

The specific program of work to be offered proposes:

1. An introductory course for juniors and seniors, dealing with

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the history, theory, and development of large scale planning. This course will be the main feature of the program. It will be entirely non-technical in charaacter so that students from the College of Arts and Sciences, Law, Medicine, or Agriculture will be as well able to follow it as those from Engineering or Architecture.

2. An advanced course to follow the introductory course.

3. Seminars in special fields.

While these courses are not intended primarily for the technical student, the very existence of the new department and the consequent additions to the faculty in a related field will undoubtedly be felt in at least three special fields.

In the College of Architecture special work in cooperation with the faculty in Landscape Architecture on their most advanced planning problems, and criticism of thesis problems as they develop will be given.

In the College of Engineering work will be carried on in cooperation, particularly with the department of Highway Engineering, intended to reinforce and extend the offerings of the department. Special emphasis will be placed on the social and aesthetic aspects of highway and parkway problems.

In the college of Agriculture where already much work has been done on the problems of land use and rural social organization, the courses will be made to reinforce one another.

Impressed with the importance of furnishing to America a group of future leaders who will have a planning background, the Carnegie Corporation of New York has approved the Cornell project as one worthy of its financial support.

Gilmore D. Clarke, who is perhaps best known for his work in Westchester County, will assume his duties as director of this inter-college department in February 1935.

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BRIDGING THE GAP

Manufacturers of building materials and equipment have long been conscious of the fact that the usual methods of merchandising which have been in vogue in the industry were often not too efficient.

Either there were big gaps in the marketing chain between factory and consumer, which had to be bridged by extra effort on the part of the property owner to find a product; or, if all the steps were carefully filled in by the manufacturer, the cost frequently was found to be high. Bad enough when times were good in building. In recent years when prospective consumers were scarce, many manufacturers definitely could not make the effort.

But now, with the Federal Government, local chambers of commerce and banks devoting so much attention and spending so much money to arouse consumer demand for renovizing and rebuilding, markets are reviving. The business is there again. How to get a share of it is the problem, without having to pay too heavily for those sales.

The Building Material Exhibit in San Francisco is now offering to a number of manufacturers a merchandising program which should be an effective short cut to profitable sales. It is focusing the attention of property owners on the exhibit as the one place where information on materials and methods is available sufficient to meet practically every need. Manufacturers participating in the program are brought into direct contact with specific prospects.

The exhibit will conduct a continuous and comprehensive promotion on the products represented. This consists of advertising, both by newspaper and by radio, direct advertising through circulars and letters, window display, publicity in consumer media, demonstrations, and other practical forms of merchandising. The objective is

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to maintain a steady flow of consumers or prospective consumers to the exhibit, in which the manufacturers have sales and display space.

The plan is financed by a definite arrangement between manufacturers and the exhibit, by which one-half of the rentals is devoted exclusively to merchandising and advertising. This for a fraction of what it would cost any individual company to locate a store on Market Street and maintain its own promotion. About 20 firms are invited to combine.

Preparations for beginning the campaign in January or February are now under way.

James A. Moffett, National Administrator of the Federal Housing Administration, reported to the U. S. Chamber of Commerce that San Francisco's campaign was the most successful in the country.

MORE UNITS

Preliminary sketches are being prepared by Lewis P. Hobart, architect, Crocker Building, San Francisco, for additional units to Grace Cathedral at Sacramento and Mason Streets. The units include a diocesan house, residence for bishop and clergy, Synod hall and choir school. The buildings will be erected as money becomes available.

BOULDER DAM

The three-millionths cubic yard of concrete has been poured into the world's largest structure of its kind—the Boulder dam across the Colorado river, record yardage at record speed.

Only 244,000 more cubic yards of concrete remain to be poured before the 727-foot high dam is completed. Some time in February, engineers say, the last bucket on the dam itself will be poured. The first bucket was dumped June 6, 1933, six months before the contract called for this operation.

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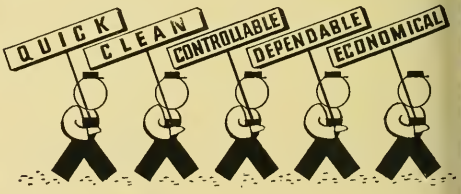

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Notes and Comments

THE advantages of advance planning of public works are manifold. Not the least of these is the availability of works for relief of unemployment in depression and for stabilization of employment over long periods. This principle has immediate application, as demonstrated by the CWA program of last winter, as well as long range value.

It is particularly desirable and fitting that the great, if hitherto volatile, construction industry should so serve as a balance in this country. America is geared for a construction industry, providing, in more normal times, employment for about one quarter of its employable persons. The collapse of the construction industry, including public works, concurrently with that of general business and industry, has had, naturally, a most serious effect in deepening the pit of depression. Even now, with partial recovery in public works and construction, about one-third of the registered unemployed are construction industry workers.

The conditions lead to the conviction that planning boards can and should render, at this time, a public service of great value by taking such steps as are necessary and practicable to further the establishment of public works projects for immediate and long time use. The service of planning boards would include logically the assembly and analysis of projects now proposed, the initiation of other desirable projects, the development of principal characteristics, arrangement and location of projects, the application of planning tests, and the determination of order of priority of projects. Desirability of projects includes not only immediate employment relief values, but need for the facilities and probable permanent usefulness and value. Proper location also is particularly the concern of planning bodies.

Local and state planning boards are encouraged to list suitably tested work relief projects and file them with local and state Emergency Relief Administrations and state planning boards with recommendation for consideration in the present emergency. In order to minimize future confusion and delays, they are encouraged also to list and prepare for consideration, for the early and long range futures, the larger or more complex public works projects which are more difficult to investigate, plan, design and construct.

THE recent competition for the best design of a small house that would last 100 years is said to have been a success. It was sponsored by a Los Angeles brick company which promises to build from the prize winning designs. Of course none of us expect to live long enough to see the claims made for these homes realized. In general design and appearance they are not unlike any other house. More than fifty architects participated in the competition. The three prize winning drawings are reproduced in the plate section of this issue.

■ ■ ■

LOS ANGELES architects have adopted a new minimum fee schedule for architectural service. It has been approved by both the Institute Chapter and State Association.

The following minimum charges, based upon the total cost of the work to the client, are for complete architectural services, including the structural, electrical and mechanical engineering required. The architect's services are to include consultation with the client, preparation of sketches, preliminary estimates, working drawings, specifications, taking of bids, preparing contracts, detail drawings, administration, accounting, certification of payments to the contractors and general supervision of the work.

The structural engineering will include earthquake design.

The architect's fee does not include the cost of the following: Superintendence by a full time inspector or clerk of the works; the cost of governmental inspection, permit and inspection charges by governmental agency, governmental checking and approval of instruments of service; the cost of tests and surveys.

Partial services are not recommended.

Fees are grouped as follows:

Group One—Minimum Fee 6%
- Industrial Buildings,
- Lofts,
- Factories,
- Exposition and Fair Buildings,
- Market Buildings,
- Buildings of like nature and complexity.

Group Two—Minimum Fee 7%
- Hotels, Apartments and Multiple Dwellings;
- Banks;
- Store Buildings;
- Office Buildings;
- Theaters and Auditoriums;
- Governmental Administrative Buildings;
- Buildings of like nature and complexity.

Group Three—Minimum Fee 8%
- Schools;
- Collegiate and Educational Buildings;
- Churches;
- Hospitals, Children's Homes and Homes for aged and indigent;
- Libraries and Museums;
- Clubs, Lodges, and Fraternity Houses;
- Mausoleums (public);
- Buildings of like nature and complexity.

Group Four—Minimum Fee 10%
- Residences;
- Swimming Pools;
- Tennis Courts;
- Shop Fronts;
- Fixtures;
- Combined shops and residences;
- Mausoleums (private);
- Monuments;
- Work of like nature and complexity.

■ ■ ■

THE Federal Government once again has put one over on the private architect. San Francisco architects expected, of course, that the new Mint here would be handed out to some local firm. Advices from Washington, however, are that the drawings for the structure are well under way in the office of the Supervising Architect. The Mint is to cost $1,250,000.

■ ■ ■

ADVOCATES of a national program for grade crossing elimination are hoping for a Federal appropriation this year of at least $125,000,000. It appears reasonable that such an amount could be absorbed by projects which are now sufficiently advanced to complete plans and specifications and all necessary negotiations within two or three months. Three arguments are advanced in favor of the program. One of these is that grade separation projects will provide more man hours of employment for the money expended than many other classes of public works and another is that the use of materials required would aid the heavy goods industries. A third argument is that it would promote greater speed in railroad transportation in which railroad executives see an opportunity to recoup failing revenues.

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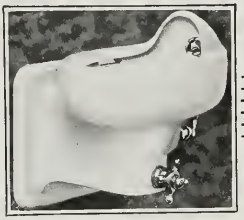

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Page 45 this issue

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Contents

Frontispiece . AIR PLANE VIEW, VETERANS ADMINISTRATION FACILITY, FORT MILEY, SAN FRANCISCO

TEXT

11 . . . . VETERANS HOSPITAL
Homer M. Hadley

17 . . . . ARCHITECTURE IN ECLIPSE
Louis La Beaume

19 . . . . MODERNIZATION
P. J. McGuire

29 . . . . POOR ZONING
Geo. H. Coffin, Jr.

31 . . . . COMPETITION

34 . . . . IF AN ARCHITECT
Kenneth M. Murchison

37 . . . . LOS ANGELES HOUSING

41 . . . . OBSERVATORY

45 . . . . THE TERMITE FIGHT
Professor C. A. Kofoid

49 . . . . EARTHQUAKE HAZARDS
R. R. Martel, C.E.

57 . . . . NEW TYPE OF WEIGHT HUNG WINDOW

60 . . . . WITH THE ARCHITECTS

PLATES AND ILLUSTRATIONS

12-16 . . . VETERANS ADMINISTRATION FACILITY, FORT MILEY, SAN FRANCISCO

19 . . . . PLAN, PROPOSED GREENWICH STREET DEVELOPMENT, SAN FRANCISCO

22-24 . . . SKETCH BY CHARLES F. MAURY, ARCHITECT

23 . . . . SKETCH BY HENRY H. GUTTERSON, ARCHITECT

25 . . . . SKETCH BY WM. CLEMENT AMBROSE, ARCHITECT

26-27 . . . SKETCH BY JAMES H. MITCHELL, ARCHITECT

32 . . . . DESIGN FOR SMALL HOUSE, AWARDED FIRST PRIZE IN "ONE HUNDRED YEAR HOUSE COMPETITON".
Edgar F. Bissantz, Architect

33 . . . . DESIGN FOR SMALL HOUSE, AWARDED SECOND PRIZE IN "ONE HUNDRED YEAR HOUSE COMPETITON".
Spencer and Landon, Architects

34 . . . . DESIGN FOR SMALL HOUSE, AWARDED THIRD PRIZE IN "ONE HUNDRED YEAR HOUSE COMPETITION".
Samuel E. Lunden, Architect

41 . . . . GRIFFITH OBSERVATORY, LOS ANGELES
John C. Austin and Frederic M. Ashley, Architects

42-43 . . . DETAILS AND SECTION DRAWINGS, GRIFFITH OBSERVATORY, LOS ANGELES
John C. Austin and Frederick M. Ashley, Architects

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AIRPLANE VIEW, VETERANS ADMINISTRATION FACILITY
FORT MILEY, SAN FRANCISCO, CALIFORNIA

THE
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JANUARY 1935
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NUMBER ONE

Veterans Hospital

by Homer M. Hadley

IN a commanding location on top of the hill where the Golden Gate opens upon the great watery plane of the Pacific, stands the new Veterans Administration Facility at Fort Miley, San Francisco.

A Facility may be defined as the means whereby a desired purpose may be accomplished easily and effectively. That to this notable group of completely equipped new buildings the name Facility should be given is but recognition of the immediate efficient service for the care of disabled veterans which they now make possible. Both normal and exceptional requirements have been anticipated and have been generously provided for, so that the institution is prepared to furnish full diagnostic care to all patients and full hospital care to the majority of patients, tubercular and psychopathic cases being hospitalized elsewhere.

In providing administrative headquarters for Northern California, a diagnostic center for the eleven western states, a hospital for the treatment of all ordinary diseases, quarters for the resident staff of physicians, surgeons and nurses, and living accommodations and means for preparing and serving meals for hundreds of patients and convalescents, it is obvious that the design problem was a many sided and complex one and that planning and co-ordinating and study of a very careful nature were necessary for the achievement of successful results. Once completed and nicely operating, an institution of this character may seem from its smooth running efficiency to be an extremely simple affair, but assuredly its efficiency and apparent simplicity were not inherent in the original initial desire and decision to have the establishment. In short, as hath been said: "Life ain't all beer and skittles." A great deal of intensive study and hard work is necessary for results like these.

[See attractive advertisers Index, Page 77]

Twenty-One Buildings

There are twenty-one buildings in the group, either separate or close-standing and apparently connected. Their appearance and architectural style are shown in the illustrations: a simple type of modern, having characteristic plane surfaces and offsets, enlivened by a limited use of decorative friezes, plaques, panels and simple molded forms. One receives the impression of substantial construction, pleasingly treated and handled, but it is the functional note that is strongest: here is a well-ordered hospital, clean-cut, efficient and intent upon its business. It is not an architectural splurge but is a very excellent example of the architectural accomplishment of a purpose, or rather a set of purposes, not themselves architectural.

The substantial appearance of these buildings is more than superficial. It is expected that this Facility will be used for many years to come. It is a permanent institution. Therefore it is substantially built, not only with respect to its structural parts but in every other way as well. The plumbing, the hardware, the interior finish and equipment—everything in short—are of a quality that may be depended upon to give satisfactory service now and henceforth.

ENTRANCE TO VETERANS ADMINISTRATION FACILITY, FORT MILEY, SAN FRANCISCO

Quake Resisting Design

This is one of the first government projects to be designed with studied consideration of earthquake hazard and prevention of earthquake damage. The proximity of the San Andreas fault, only a few miles offshore in the ocean, gives a certain por-

tentious reality to the problem of earthquake resistant construction. It is not a purely abstract and academic problem.

Accordingly the design of these all-reinforced concrete buildings contemplates the occurrence of "1-10 G" earthquakes continuous over them. In times of earthquake this tile will be in a tight place and may reasonably be expected to crush and crumple. Such anticipated damage may properly be classed as purely local, however, and may easily be repaired.

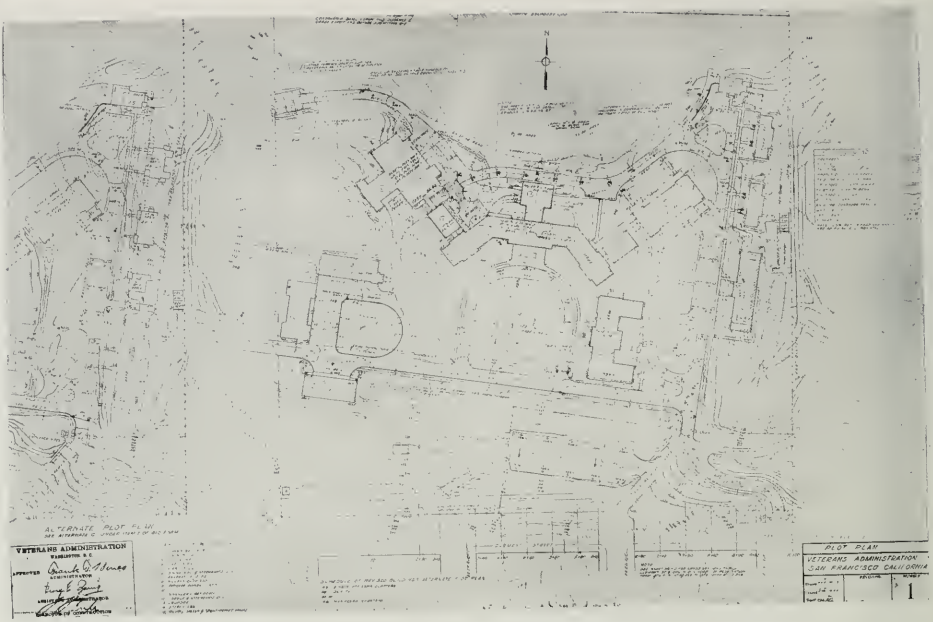
MAIN GROUP OF VETERANS ADMINISTRATION FACILITY, WITH HOSPITAL UNIT (Left) AND ADMINISTRATION BUILDING (Right)

and by the exterior concrete walls and by what interior concrete bracing walls were necessary, resistance to such earthquakes has been provided. As a matter of fact, resistance to much more severe earthquakes inheres in the great strength and rigidity of these buildings. An interesting detail is the use of "crumple sections" of tile between closely adjoining buildings of different size and vibration periods. These "crumple sections" fill the gaps between such buildings and permit the stucco exterior finish to be extended unbroken and

The exterior stucco referred to is unusually thin: 3-16". The rough form, board surfaces of the concrete were sand-blasted to assure the best mechanical bond possible; then the plaster was troweled on and was vertically broomed for texture. It is of a light cream color. It was gone over with colorless waterproofing. Coal tar dampproofing and 2" tile furring were used on the inside of the walls.

New Type of Terra Cotta

The terra cotta trim is of a pleasing light tone. Mayan designs are employed. It is



PLOT PLAN, VETERANS ADMINISTRATION FACILITY, FORT MILEY, SAN FRANCISCO

NURSES' QUARTERS, VETERANS ADMINISTRATION FACILITY, FORT MILEY, SAN FRANCISCO

NURSES' QUARTERS, VETERANS ADMINISTRATION FACILITY
FORT MILEY, SAN FRANCISCO

RECREATION CENTER, VETERANS ADMINISTRATION FACILITY,
FORT MILEY, SAN FRANCISCO

ADMINISTRATION BUILDING, VETERANS FACILITY, FORT MILEY, SAN FRANCISCO

of the new solid section type—not cellular. It is attached by ties to vertical galvanized pencil rods which are anchored to the concrete and the intermediate space between tile and wall is slushed solid with mortar.

Some 342 beds are at present provided. It is expected, however, that future construction will more than double this capacity. An occupancy of fifteen days is the average per patient. The beautifully well equipped kitchen can handle 750 to 800 patients.

The site and surroundings are unusually attractive. The grounds are spacious and are well laid out. There are numerous fine native Monterey cypress. There is sunlight and fine fresh air. The northerly buildings have sweeping views of the Golden Gate, from the ocean far in to the bay. Unquestionably it will be a very successful institution.

Architecturally and structurally it is the design of the Construction Service of the Veterans Administration, whose regulations impose a lamentable anonymity upon the individuals who planned and supervised the work. The Herbert M. Baruch Corporation of Los Angeles were awarded the general contract for the construction at a cost of $898,800. The completion of this contract and the dedication on September seventeenth has brought the institution into operation and the Facility now functions.

Architecture in Eclipse

by Louis La Beaume

WHEREVER two or three (if there are so many) architects are gathered together, there is wailing and gnashing of teeth. The present economic plight of architects is decidedly uncomfortable; and it may be that the future of architecture as an art hangs in the balance. However, there is no activity so conducive to pessimism as inactivity, and it is not surprising that many among us seem to be at our wit's end. But when we have come to the end of our wit, prudence should impel us to tread carefully, to speak with measure; and, if possible, to think realistically. To rage and lash about will only exhaust whatever of energy or dignity or philosophy we have saved from the wreck.

Let us therefore try to be calm if we can't be witty. Let us, even though as practitioners of a great art we feel ourselves capable of great emotion, survey the world about us coldly; let us appraise the inimical forces both within ourselves and without, which are arrayed against us. At the moment, we must admit that we are sorely tempted to cry out with Othello that our "occupation's gone." Architecture seems to be in eclipse; and architects are no longer needed, no longer loved, no longer even suspected of being architects! Often have we cried thus before, and often have we taken heart at the first knock of a prospective client at our door. Surely we shall take heart again.

Meantime we shall do well to examine our own shortcomings while awaiting the long deferred coming of new clients, or of old clients with new and may-be irritating symptoms.

First of all let's not be morbid. It may be that we have lost the world's respect, but the mere fact that we have nothing to do to-day is no clear proof of it. It is, of course, possible (but only barely possible, *please*) that we are on the way out. Civilization may really be disintegrating and, if so, the art of architecture will disintegrate with it.

But, if civilization, even our civilization, mean though we may consider it, is to survive, architecture will not perish. Whether or not the profession of architecture will survive is another question; and a question of infinitely less importance, to mankind. By the profession of architecture we mean of course that more or less organized

group of more or less heterogeneous elements to which we belong. What is good in our creed will be saved; what is not good will be washed away.

It is difficult to imagine any civilization without some sort of architectural ideal. History teaches, if it teaches anything, that men have always indulged their lust for building; and the more intelligent among them for beautiful building. True, their passion like their taste has ebbed and flowed, risen to great heights and fallen very low, at times. Who built the great works of architecture in the past? Who will build them in the future? There is only one answer and that answer must be encouraging to all of us who love architecture as an art more than we love the practice of architecture as a business. For the art of architecture is eternal; though the profession as we know it may be ephemeral, and of a certainty is comparatively modern. The professional attitude of the artist however, the attitude of unselfish service and devotion to the highest ideals of his art, having nothing to do with promotion, salesmanship or merchandising, is as old as Time. And it will persist and be cherished in a world of intelligent human beings.

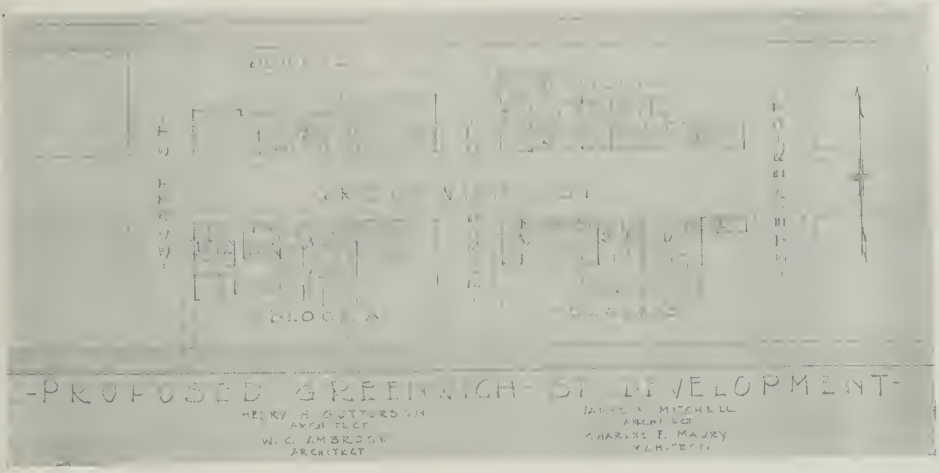
There are many apparently conflicting forces at work in the world to-day and they are difficult indeed to evaluate and appraise. It may seem sometimes that we are in for a period, long or short, of the Socialization, or even the Sovietization of industry, and all forms of human activity, including art and architecture. There has been much nervousness among bankers and industrialists on this score. And in the face of governmental policy, as now understood with regard to architecture, we can scarcely be blamed if we become a little jittery. Jitters is quite the fashionable ailment just now in the business world, and nothing will so quickly convince the public that we, too, are business men, as to shudder and shriek and foam at the mouth.

We are stunned as a result of Secretary Morgenthau's order regarding Federal Employment of architects. We don't clearly understand the reasons for it. But undoubtedly there must be reasons, even though we may not consider them good ones. Our job would seem to be to get at the root of the matter, if we can, to try to ascertain by discussion with the responsible members of the present Administration whether their policy is or is *not* in the public interest. By all means let us take the upper ground and hold it, basing our arguments at all times on the integrity of architecture and on the public (may be even against our private) interest.

That we have been following false gods is undeniably true. We have heard far too much of the necessity for the architect to become business man, engineer, promoter, banker, real estate operator, sociologist, what not? in order to compete with these several hierarchies. We have been urged to advertise, to fraternize, to contract, to expand, to be an Elk, or a Lion, or a Moose, or a Mason, even in these days when we are warned that the era of masonry has passed, and all we shall have to do will be to cover skeleton structures with synthetic raiment. We have been frightened by the encroachments of the contractor and speculative builder into the Sacred grove which is the hallowed abode of our shy Muse. We are being told that these are the Bogey men who'll get us if we don't watch out. And sad to say, we have harkened to these foolish counsels.

Building is a business, but architecture is an art. An art, however, which needs for its fullest expression not only "con-

[Please turn to Page 40]



Modernization

by P. J. McGuire

THERE are few American cities to which the Federal Housing Act loans are not the opportunity of a life-time. To San Francisco they are more. At the cost of a proverbial record they are a *second* knock of opportunity . . . the opportunity to correct the bad planning, the ridiculous design, the shoddy building which blights whole sections of otherwise desirable residential property.

Opportunity's first knock resounded over the world in the San Francisco fire of 1906, when spring found thousands of hideous homes, jerry-built in the 80's and 90's, at last cleared from the face of the earth. In the Mission District; west of Van Ness Avenue; in that section then called Harbor View, were those who rejoiced that the greedy flames had spared their houses, but for the greater part of the city the opportunity offered to start afresh the construction of new, clean and attractive homes, free of the faults of the huddled horrors destroyed.

The "spared" have lived to question their blessing. Those blocks of crowded buildings, dark and dingy, their ugliness emphasized by the tawdry gim-crackery of their "doo-dad" encrusted faces, are the mournful graveyards of property value. The land upon which they stand has lost all but the sorry ghost of its desirability as a place to live, prostrated beneath the load of shabby, decrepit building. Most of the "spared" have long since come bitterly to resent their blessing, regretfully to

charge the great fire with wilful neglect of its duty.

Yet by the dwellers in the thousand blocks destroyed, opportunity's knock went unheeded. With a spirit and an energy applauded by the whole world, they threw themselves into the task of rebuilding . . . of re - jerry - building. They rebuilt their huddled, flat-faced houses, the same rows of characterless monstrosities, but substituting this time the bad dreams of 1900's mill - wrights for those of the preceding decades.

But opportunity knocks again. In one of the most constructive pieces of legislation ever offered a people, San Franciscans are offered the chance to live well, comfortably, in trim, clean, attractive homes. Soundly and sensibly the Federal Administration has put the cost of building or re - building, renovating, repairing, modernizing, within the easy reach of every responsible person.

The sorry lesson of 1906 remains to hint a warning. And the first stirrings of building activity under the new conditions further warns that, without a standard-bearer's leadership, the fruits of this second opportunity will prove as disastrous as the fruits of the first.

Experience a Good Teacher

Ninety percent of the owners of homes make their largest single purchase when they buy that home. Ninety percent of the ninety percent are destined to live out their lives in that house. The details of its planning, its equipment, its very appearance, materially influence the length of those lives . . . their achievement . . . certainly their enjoyment. Yet such is human nature that what is ours of habit is well enough. The poet's wish remains unfulfilled . . . we seldom see ourselves as others see us. If some Power gave us the ability to visualize our homes as the regrettable things they too often are, the new opportunity would be productive of a rush to efface the faults of our out-moded, unsightly houses, to secure to them the desirability possible.

It is when batting for that Power, able and willing to help the owner to see his house as it is; as the qualified standard-bearer of improved living conditions; that the architect is seen in his most ideal character . . . creator of beautiful buildings, arbiter of housing standards, protector of the well-being of the community, counselor to the owner of a home. And it is to the leadership of the architect that we must look if the Housing Act is to achieve its proper success in raising the standards of American housing.

Four San Francisco architects have joined their efforts in pointing the way of such leadership. The story of their undertaking is here briefly sketched.

Following an exhaustive survey of San Francisco housing, Charles F. Maury, A.I.A., proposed to the Architects' Home-Building Service an excellent field for an initial study in district rehabilitation . . . that section at the North end of the city, bounded by Van Ness Avenue, Baker Street, Union Street and Chestnut Street, the "Harbor View" of 1906.

In selecting this section for study, Mr. Maury's considerations were these:

1st: The section was unattractive, without character, definitely depressed as to value and depressing as to appearance.

2nd: Largely, the section was one of one to four family dwellings, a majority of them owned by an occupant.

3rd: While not by any means containing the worst nor most hopeless conditions to be found, the section as it is is distinctly "on the down grade".

4th: Yet, while values and, consequently, rents are low, and vacancies many, the

section is a four-block wide strip between two of the city's most valuable and most desirable residential areas . . . the Marina, north of Chestnut Street, enjoying a basic land value of $150 per front foot and containing the most readily rentable space in San Francisco, at relatively high rents . . . and, to the South, Union Street, the slope of Russian Hill, with its Pacific Avenue, Broadway, Vallejo and Green Street sites of the city's most aristocratic homes.

In a word, the section selected represented a remarkable example of advantageously situated, climatically and geographically desirable land, blighted by bad building.

Architects Collaborate

To pursue the study projected, Mr. Maury secured the assistance and collaboration of three other members of the profession, Henry H. Gutterson, James H. Mitchell, and William Clement Ambrose.

In their approach to the study, the architects accepted the most practical view of the problem . . . that to their habituated occupants and owners the buildings would not be seen in their true light . . . that suggested improvements might not be too drastic without discouraging all improvement . . . that the changes suggested should be limited to those calculated to be possible for definitely limited costs.

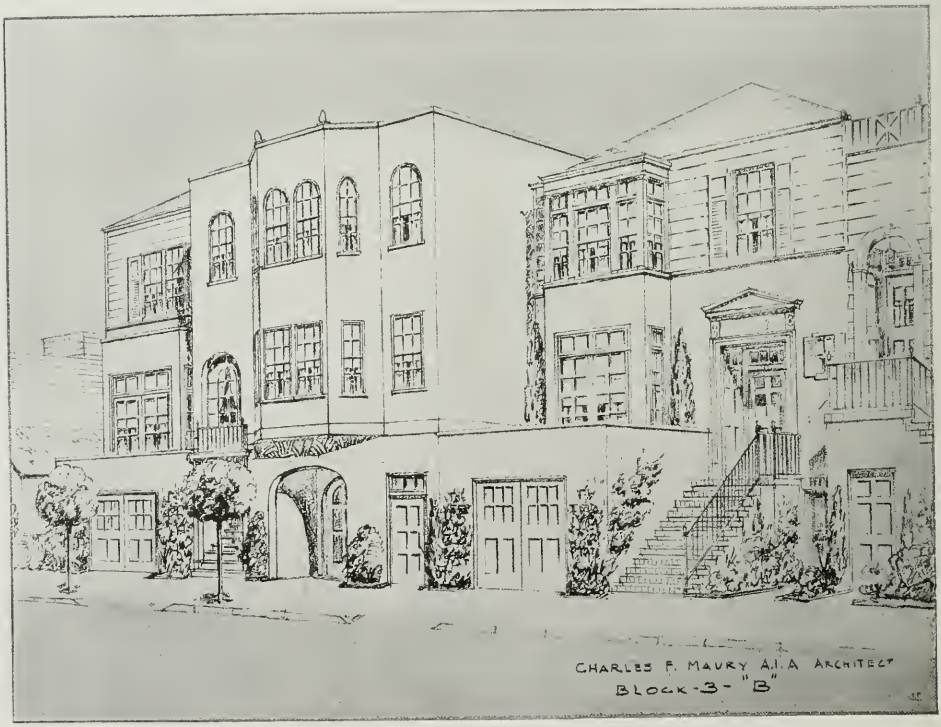
Since, obviously, the value of each individual property in these closely built blocks is influenced directly by the appearance of each other property in its block, the study contemplated the remodeling of those buildings in a single long block as a unit. And, since it was conceded that the true need for remodeling was not sufficiently apparent to the owner without the forceful argument offered by the contrast of what was with what might be, the initial studies were necessarily limited only to sketches graphically visualizing improvement possible in the front elevations.

For these studies the four architects selected and allocated the North line of Greenwich Street, between Steiner and Pierce (Mr. Mitchell), the South line in the same block, (Mr. Maury), the North line of Greenwich between Pierce and Scott, (Mr. Gutterson), and the South line in that block (Mr. Ambrose). And in these pages the reproductions of sections of the study, so forcefully presenting the "Before - and - After" story, remain their own best protagonists.

Four San Francisco architects have willingly given of their time and their abilities thus to direct home-owners toward realization of the full opportunity the Federal Housing Act offers. To the property owners concerned who have ears to hear this second knock of opportunity, the study indicates a simple means to better and more attractive living, a certain increase in the value of their properties, in the revenues from rental, far in excess of the probable costs involved.

But, whether or not those home-owners directly concerned with the study presented proceed to the realization of their great opportunity, the architectural profession, in the persons of these standard-bearers, has pointed the way to better, healthier, happier and more attractive living for San Franciscans.

BUILDINGS, SOUTH SIDE OF GREENWICH STREET, BETWEEN PIERCE AND STEINER, SAN FRANCISCO



SKETCH OF SAME BUILDINGS SHOWING IMPROVED STREET FRONTAGE
Charles F. Maury, Architect

BUILDINGS, NORTH SIDE OF GREENWICH STREET, BETWEEN SCOTT AND PIERCE, SAN FRANCISCO

SKETCH OF SAME BUILDINGS, SHOWING IMPROVED STREET FRONTAGE
Henry H. Gutterson, Architect

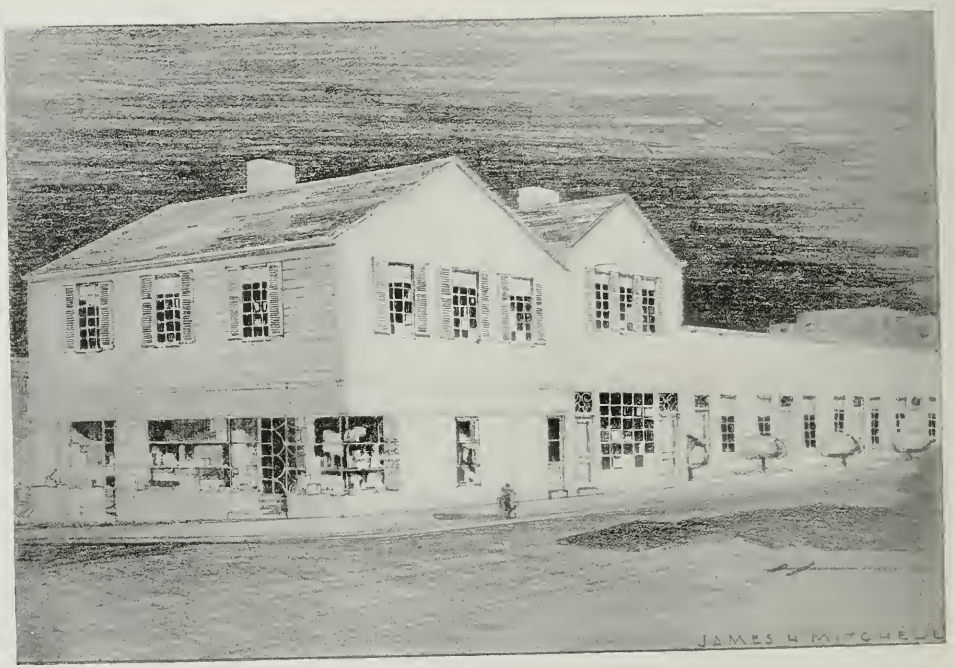
BUILDINGS, SOUTH SIDE OF GREENWICH STREET, BETWEEN PIERCE AND STEINER, SAN FRANCISCO

SKETCH OF SAME BUILDINGS, SHOWING IMPROVED STREET FRONTAGE
Charles F. Maury, Architect

BUILDINGS, SOUTHEAST CORNER OF SCOTT AND GREENWICH STREETS, SAN FRANCISCO

SKETCH OF SAME BUILDINGS, SHOWING IMPROVED STREET FRONTAGE
Wm. Clement Ambrose, Architect

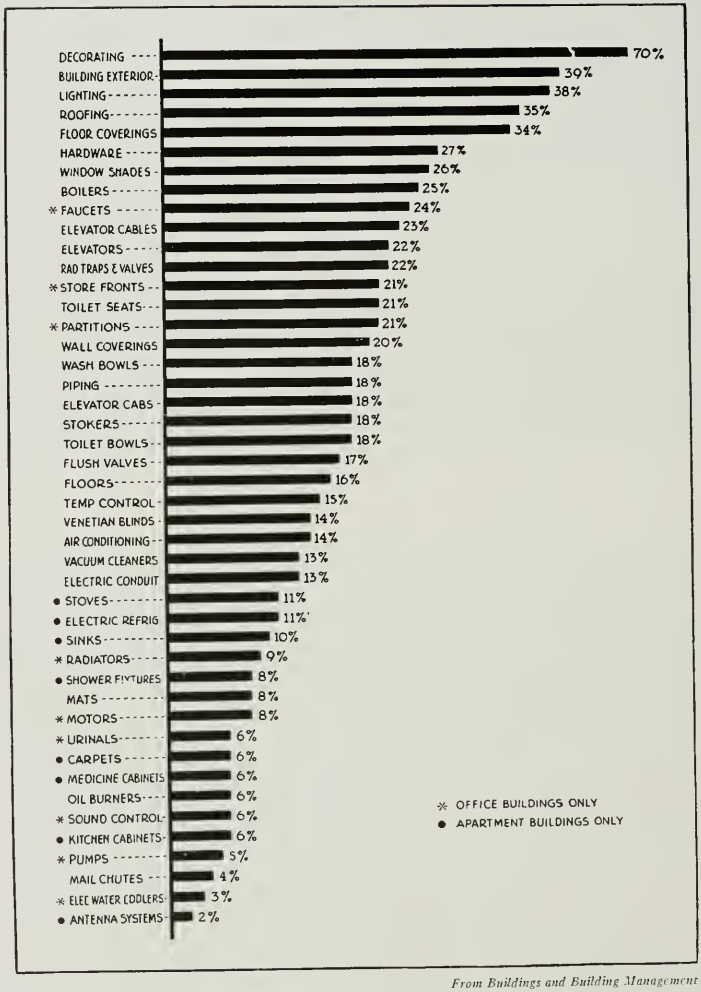
BUILDINGS, NORTHEAST CORNER PIERCE AND GREENWICH STREETS, SAN FRANCISCO



SKETCH OF SAME BUILDINGS, SHOWING IMPROVED STREET FRONTAGE
James H. Mitchell, Architect

ALLEY, EAST SIDE OF PIERCE STREET, NEAR GREENWICH, SAN FRANCISCO

SKETCH OF SAME VIEW, SHOWING IMPROVED FRONTAGE
James H. Mitchell, Architect



From Buildings and Building Management

COMPOSITE CHART OF IMPROVEMENTS PLANNED BY BUILDING OWNERS AND MANAGERS IN MODERNIZING OFFICE AND APARTMENT BUILDINGS DURING 1935

Drawing shows the relative rank of improvements in this year's modernization plans, the percentages indicating the number of times improvement was reported in terms of the total number of reports analyzed.

Poor Zoning

by Geo. H. Coffin, Jr.

IT WAS a wise man who said "you cannot make a silk purse out of a sow's ear." Neither can you make business property out of subdividers' illusions, deed restrictions or zoning classifications. Sound economic forces create the relatively limited frontage of any city which can profitably be devoted to business use. Unfortunately, most of the so-called business frontage was born of the wedlock between ignorance and speculation and the naked miles of vacant lots along our arteries of travel are mute testimony to an economic waste of such proportions that the imagination is startled at the farce of perpetuating this needless waste into the eternity of tomorrow.

In sixty per cent of the area of Los Angeles City which is now zoned, there are 600 miles of frontage zoned for business use exclusively, a staggering frontage equivalent to 126,831 lots with an average frontage of 50 feet each, equal to the distance from Los Angeles to the Arizona line and then across the state of Arizona to within ninety miles of New Mexico.

A careful calculation discloses that not exceeding 14½% of this frontage is actually improved with business structures. In the entire City of Los Angeles, zoned and unzoned areas, there are 21,638 business structures of all kinds from office buildings to service stations. It is conceded that a minimum of 85% of these buildings are located within the 60% of the area which is zoned. We all recognize the fact that a large portion of the 14½% occupied frontage should never have been improved for business. The mere presence of business buildings on thousands of lots already improved does not warrant the conclusion that the land so occupied ever was, is, or ever will be business property. The financial heartaches of the owners and mortgagees of such misplaced investments can attest to this truth. This leaves 85.5% of the zoned business frontage vacant, most of which is permanently committed to enduring idleness unless curative measures are adopted, and this can only be done through the medium of education.

It is conceivable, though exceedingly doubtful, that with the continued growth of this city the next twenty years may witness the absorption into use of 8% of these zoned lots which are strategically located and about which the environing factors warrant the dignity of potential business classification.

The rate of absorption of unimproved business property, even such thereof as is favorably located, will depend principally upon the demand created by future influx

Editor's Note—In Mr. Coffin's article, the City of Los Angeles is used as an example of improper zoning; however, a similar story would be true for any city.

of population. To attempt to predict this future increase with any degree of close accuracy is quite impossible. Suffice it to say that the tremendous rate of growth from 1920 to 1930 is unlikely of repetition at any near future date. The growth from 1920 to 1924 was approximately 89,000 annually, but from 1924 to 1930 this phenomenal rate had decreased to approximately 50,000 annually. Since 1930 it is obvious that our annual gain has been materially lessened by the forces of depression.

Now that we have sketched in the outlines of this picture of economic waste, we face the question of what can be done about it. Certain distinct remedies are available which can be made to apply to a large part of this dormant frontage. The worst obstacle to a solution is the almost impassable barrier of ignorance on the part of the average owner of such land, but the dawn of realization is breaking in some sections under the painful tutorship of continued pressure on the checkbook. Some very intelligent action has already been taken with profitable results.

Much can be accomplished by the mere change of zone with the necessary cooperation of the zoning authorities and the assessor's office. A typical example is . . . originally zoned for business . . . in 1923. It did not develop in accordance with the zoning and in 1928 the owners realized the mistake and petitioned for the re-zoning of the frontage to prohibit business and to permit multiple family use. The result is that with the exception of five lots in the first two blocks south of . . . every lot is developed today and producing an income even in these distressed times.

Another medium of absorption of these vacant stretches is an example admirably established by the City of Beverly Hills in condemning approximately 75 feet of frontage . . . and converting the whole thereof to park purposes. Every neighboring lot has been materially enhanced in value by having this beauty spot accessible. Such procedure is particularly valuable to multiple family districts where improvements absorb the major part of the total lot area and where the congestion of families calls for proximity to open areas for recreation and comfort. Multiple structures located reasonably close to parks enjoy a much higher occupancy factor than those without such conveniences. A district bond issue was the method used to acquire the park strip in Beverly Hills and the Park Department maintains same in a most creditable manner.

I place but negligible blame for the overzoned business frontage status of Los Angeles, or any other city, at the doors of the planning commissioners and city officials except for their lack of backbone. I regret to state that much criticism must be directly charged to the greed of the property owners themselves, whether subdividers of large areas or individual lot owners whose demands upon the authorities, and the pressure used to enforce these demands, has been of such magnitude as to force the dedicating of otherwise usable frontages to eternal wastage by improper zone classifications, thus making it possible during an active real estate market to exploit such land, pocket the false value created by the establishment of a business zone, and depart leaving a trail of depleted residential value in their wake.

It has heretofore been difficult to combat a strange psychology, not founded upon reason, which casts an apparent charm over any property called business. The average citizen feels an inclination to insert his thumb in the armholes of his vest and revel in the opinion that his particular property when zoned for business is the real diamond, whereas his neighbor's lot zoned for multiple dwellings or single family residential purposes is but imitation.

PUBLIC LIBRARY

Competition

For 100 Year House

THE jury has made its selection of prize winning designs in the "Hundred Year House Competition," open to all certified architects in California, and the profession, as well as the public, will await with interest construction of the house awarded first honors, since its promised longlivity will mark a new era in small home building. All of the three prize winning designs are distinctly different in plan and architectural treatment.

First prize was awarded to Edward F. Bissantz of South Pasadena; second prize to Spencer and Landon of Los Angeles, and third prize to Samuel E. Lunden of Los Angeles.

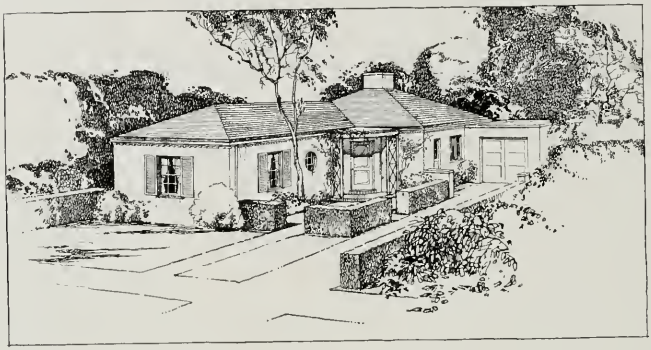
Honorable mention was given to the following: H. Roy Kelley of Los Angeles, Frederic Barienbrock of Santa Monica and H. Scott Gerity of Los Angeles.

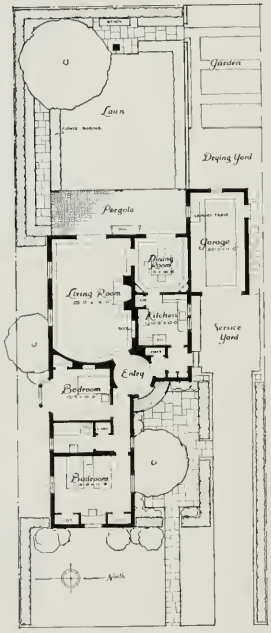
This competition was conducted under approval of Southern California Chapter, American Institute of Architects, Harold C. Chamber of Los Angeles, acting as professional advisor while the jury consisted of Roland E. Coate, Los Angeles; E. W. Maybury, Pasadena, and W. L. Risley of Los Angeles.

The competition was for the best design and plan for a one-story house, the floor area of which was limited to 1400 sq. ft., to be constructed with exterior walls of reinforced Groutlock masonry.

Minimum requirements were that each plan should provide for at least a living room, kitchen, bath and one or two bed rooms. Otherwise utilization of the allowable floor area was entirely at the option of the competing architect, an option which was very freely exercised, it is revealed by a study of the drawings submitted. Only one entry failed to qualify, due to the use of a color tint, whereas the program called for all renderings in black and white.

None of the prize winners show any very radical departures from traditional architectural design. It is interesting to note that in all the drawings accepted there was no evidence of a trend to the ultra-modern and that however popular it may be in the commercial field architects generally do not look with favor upon it for residential work.

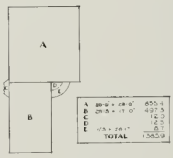




West Elevation

South Elevation

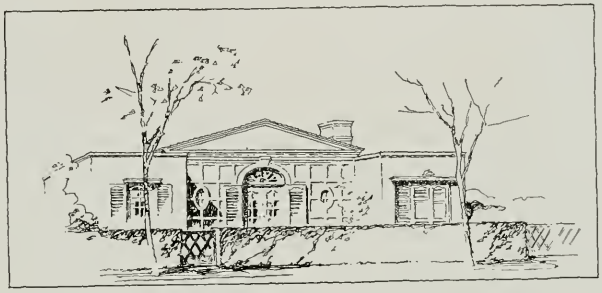
Section thru Cornice
Scale ½"-1'-0"

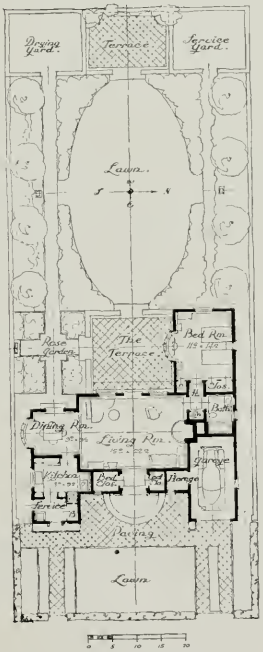


A SMALL HOUSE REINFORCED GROUTLOCK MASONRY

AWARDED FIRST PRIZE IN "HUNDRED YEAR HOUSE COMPETITION"

EDGAR F. BISSANTZ, ARCHITECT

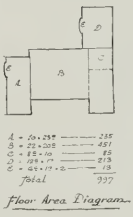




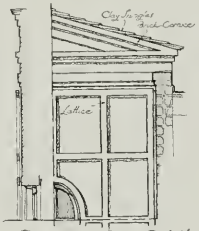
East Elevation.

West Elevation.

South Elevation.



Floor Area Diagram.

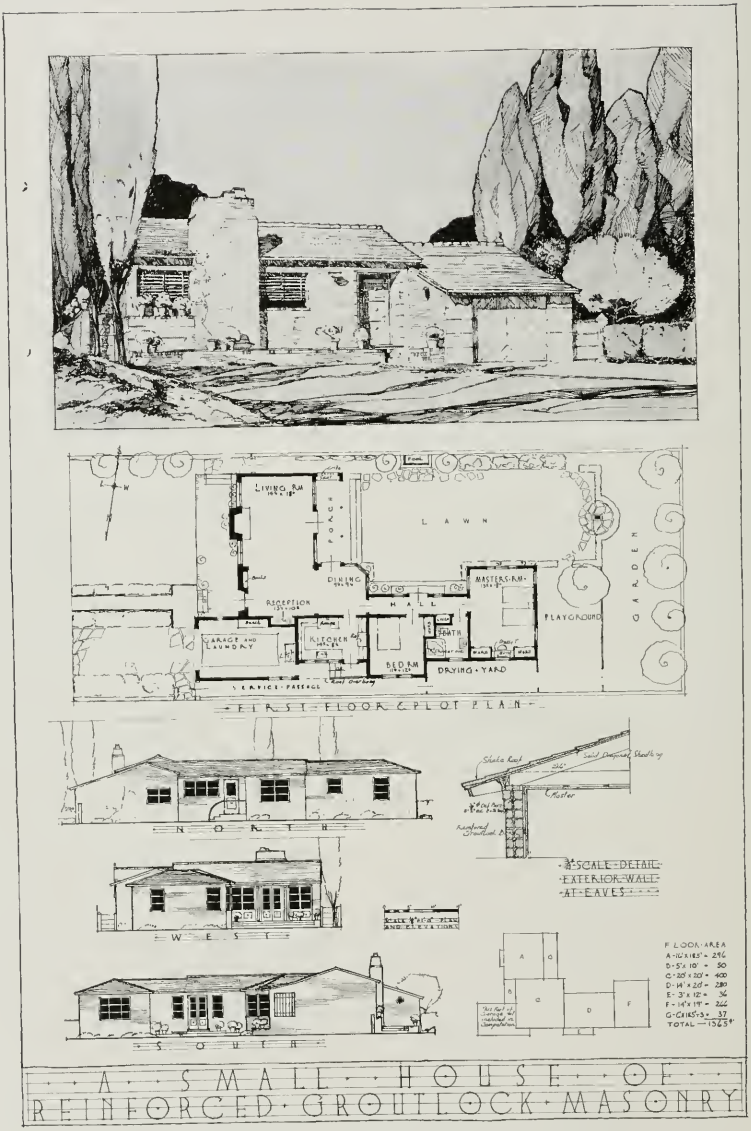


Cornice & Eave Detail.

A Small House of Reinforced Grouflock Masonry

AWARDED SECOND PRIZE IN "HUNDRED YEAR HOUSE COMPETITION"

SPENCER AND LANDON, ARCHITECTS



AWARDED THIRD PRIZE IN "HUNDRED YEAR HOUSE COMPETITION"

SAMUEL E. LUNDEN, ARCHITECT

If an Architect

by Kenneth M. Murchison, F. A. I. A.

EDITOR'S NOTE—*Architects will find both amusement and logic in this little talk by Mr. Murchison. It was made before the Architectural League of New York and printed in the November* Octagon. *How many of you are having the same experience as Mr. Murchison describes?*

I HAVE come back to the League today to talk to you a few minutes about those whom you love the best—Architects. Architects are like actors—they always talk shop. They like to talk about themselves. That's only natural. We all like to talk about ourselves. It's a very very interesting subject. And if you here who are not architects aren't interested, just pretend you are, and let it go at that.

A good architect is supposed to be composed of one part art, one part frozen music and one part plumber. He isn't supposed to know anything about business nor about selling. Architects are probably the worst salesmen in the world. When they get in front of a board of directors they turn a pale green and lose all command of the English language. And their guesses on cost are almost always too low. And never include the architectural commission.

Certain fundamental things have been left out of their education.

1. How to get a job.
2. What to do with it when you get it.
3. What to do with your money when you make it.

There are no courses on these questions either in the Beaux-Arts Institute of Design or in the Universities. But there ought to be a business course in every school of architecture. Architecture is not all art. No architect can exist on art alone. Be arty, yes, that's all right, but not *too* arty. Just remember you are spending the client's money. He has probably had to work hard for that money. And he wants to get 100% return for it. He wants it well spent.

Now firstly, *How to get a job.*

You'll never get a good job unless you know something. And you must enjoy public confidence at the same time. And that means publicity. I believe in publicity for architects just as I do for banks, for theaters, for the radio and for music.

The architects have been backward in this. They shun advertising. It is unethical. Doctors and dentists and lawyers don't do it. But architects are different; they are not only professional men—they are in business. Through them many people are employed; many industries are supported by them. And if they are engaged in a business, as they undoubtedly are, then why shouldn't they advertise?

Bill Gompert has long had the idea that in public matters the architects lacked leadership. They ought to have a Public Relations Department. Business is waking up

to the desirability of including that newfound profession in its curriculum. That's the kind of a position that I secured, and for such a job I don't see why architects aren't as well fitted as anyone else. They have education, an artistic feel, contact with the public and a sense of appreciation on their side. And public relations is such an elusive sort of thing that no one knows whether the public relations man knows anything at all. So that lets the architects out!

My job at Central Savings Bank covers a lot of things. I handle advertising, redesign billboards, get out a notice whenever the president goes out for an automobile ride, talk to employees about the tremendous value of customer relations—just now I am finishing writing a Jewish calendar, which was so good that they are going to use it for the Catholics as well.

* *

Now as to the second thing, *What to do with a job when you get it.*

I don't think we have to discuss that. Do with it what you can. If you don't do well, you probably won't get another job from the same client, or at least, you won't deserve to get one. Give him a square deal. If it's a lady, tinge your squareness with a little Emily Post propaganda. Get your home economics stuff down by heart. Show your client you know what rooms are meant for and give her the best that's in you.

But it is on the third point that I want to dwell, *What to do with your money.*

I am spreading the gospel of something I never took seriously before—saving! And likewise, not falling for the get rich quick schemes, nor taking a chance in Wall Street. We have all done it; we've all been hooked; we've all fallen for easy-money schemes.

As I look back on my architectural career, I realize that I wasted a prodigous amount of time and money on promotion schemes. Out of a hundred I did during a year or two, I don't think one came home to roost! They all looked wonderful but they never materialized. You listen to the blandishments of the real-estate promoter; the architect puts in the first money; then he gets his friends in; then his friends are his friends no longer — and he might as well not have gone into the thing at all. It doesn't always turn out that way, but alas! it does very often.

Now of course, I am in the savings bank business. My job is to promote public confidence in the savings banks, to get new depositors, and to enhance the prestige of savings banks in general—and ours in particular. Our publicity is along the line of teaching people to save. Not only for old age and the loss of your job, but for all sorts of things — babies, appendicitis, a trip to Paris, life insurance policies; save an amount sufficient to pay your taxes and interest on your mortgage, save up to buy safe securities, and so on. But put your money in a safe place. Mutual savings banks always pay dividends, sometimes high, sometimes low, but always as high as is commensurate with safety and with State and Federal laws.

* * *

I don't tell you to put all your money in the savings banks. You've got to live. You've got to have amusements. You've got to send your children to school. You've got to cut some kind of a dash in society. All that without doubt. But what I tell you is: Beware of promotions; beware of speculation; invest wisely, even if it's in a distillery, and save up for everything else.

I am fully aware that nobody here today has anything to save. I know that architecture is in the doldrums. I know

[Please turn to Page 40]

L. A. Housing

Subsistence Homesteads

BIDS have been received in Washington for erection of 100 dwellings—the initial unit of an ambitious Federal housing project which will soon be under way in Southern California. The location is about one mile from El Monte. Joseph Weston, who has made a study of the Subsistence Homestead, is architect for this suburban homes project which eventually will provide correct housing in a semi-rural environment for 140 typical American families.

The size of the houses was necessarily one of the first considerations. The census figures for Los Angeles County show an average family size of 3.84 persons. Taking this average as the desirable figure, the houses were divided into four types, according to the number of bedrooms and the possibilities of increase in the family size. The first type is a small complete house intended primarily for childless couples. The second type has one bedroom and although only limited dining area is provided, the house is planned for future expansion. The third and fourth types have two and three bedrooms respectively and are both planned for added bedrooms. Both provide ample dining area in the original state.

Housing in such a project could not be considered correct if the cost were more than the occupants could really afford to pay. Hence one of the primary problems was that of determining just where the available money could be spent to best advantage. Automatically many thoughtless prejudices had to be cast aside; several uncommon practices incorporated. It seemed far more important to Architect Weston to provide heat in the bedrooms than to specify a concrete floor in the garage. Likewise replacing the usual too small breakfast nook and extravagant dining room with an adequate dining area capable of expansion for entertaining, was evidently worth while if the saving would pay for fifty extra bedrooms for the project.

Occasionally stringent economies were practiced where a future small investment or initiative on the part of the owner would accomplish his desires; they were not employed where future improvement would be difficult. For example, more electric wiring both for lighting and convenience outlets was provided than the administration's policy advocated. This expense was compensated for by using the very simplest of lighting fixtures. Substituting a more hand-

some fixture later would be a much simpler process than adding electric outlets.

Plans were re-studied time and time again to secure maximum economy since even a small saving, multiplied by 140, was distinctly worth while. One foot saved in the length of the bedroom halls, as an instance, would add four bedrooms to the project; would take eight more children from unhealthy, uncertain environment and place them in wholesome, rural surroundings. It was this social aspect of the design problem which gave it endless fascination.

Standardization was applied wherever it would simplify construction and reduce costs without resulting in monotony. No two kitchens are exactly alike, due to the variety of the plans, yet all kitchen equipment is standardized and in every house the sink unit, cooler, food cupboard and serving cupboard are identical.

The appearance of the houses was established by practical as well as aesthetic considerations. Since the Government's equity may extend over a period of twenty years, a durable structure free from necessity for repair was indicated. After long consideration from every angle, the more expensive modes of construction and many unproven experimental methods had to give way to tried-and-true frame structure with plastered interiors and various forms of pine and redwood siding on the outside. A fresh approach to the problem of using this construction in its simplest, most logical and honest manner dictated the character of the exteriors with no little precedent drawn from the finer of the old California ranch houses.

The freedom in plan resulting from the wide frontages gave rise to a variety in elevation and a rambling character to the whole which seemed indigenous to the semi-rural surroundings. Further, this elongation of the plan often allowed two or even three sides to be used with impartiality as the street facade. Thus additional variety was secured for the entire project. At the same time repetition of certain elements such as size and proportion of windows even to the proportion of the panes, and similarity in roof pitches and textures achieved a unity throughout the whole.

Certain plan problems were encountered which made the problem distinct from an ordinary city house. For example, frequent work in the garden would greatly increase housework unless it were possible to clean up without tracking dirt through the house. Additional plumbing fixtures were beyond the budget, so every house was planned, without exception, to provide access from the outdoors to a clothes closet for the temporary storage of work clothes and on to the bathroom without going through any other room in the house. This feature holds true even after the future additions are made. Another variation from the city house is the freedom with which the plans open out to the garden. It is the unusual house which does not open on at least three sides and some of the larger houses have as many as five exterior doors to encourage outdoor living.

It was necessary to provide considerable flexibility in plan to accommodate a variety of occupants. The placing of the refrigerator will serve as an illustration. If the homesteader owns a mechanical refrigerator, space in the kitchen is both wired for electricity and piped for gas. Should the owner possess an ice refrigerator, this space may be occupied by a movable closet normally on the service porch, while the refrigerator is placed on the porch where it may be served without entering the kitchen.

Every room in every plan has cross ventilation. Accomplishing this in larger houses

ordinarily tends to create unwieldy plans. How this has been avoided may be judged by the plan of the largest house on the project. Although the hall serves the living room, bath, and four full size bedrooms all having cross ventilation, and opens directly to the outdoors as well, it is but a few feet longer than the average inside hall in the ordinary two-bed room house.

Kitchens have been planned on the accepted theory of dividing their functions into five: storage, preparation, cooking, serving of food, and the cleaning up processes. Equipment is arranged in this same order as the food progresses from the raw product entering the service porch to the finished article in the dining area. Studies and charts were made of varied kitchen activities and lengthy correspondence ensued between the architect and the Division of Subsistence Homestead's home economics expert in Washington to assure maximum convenience of arrangement. The final plans even went into such fine detail as to provide a special place for clamping a meat grinder.

The problem of duplication of design demanded an early decision. Between the minimum of four designs for the four types and a maximum of a separate design for each homestead, a logical medium had to be established. Study of the problem proved that seventeen designs, many of which could be used with alternate faces to the street, gave sufficient variety with maximum economy. Careful distribution of these seventeen plans has divided the population quite evenly in any given area and has so scattered the duplications that with the exception of certain desirable repetition to emphasize a point in plan, no two houses in any block are alike. Nor is there a uniform setback. Some houses are within forty feet of the street while others, to be allocated to families with enough imagination to realize that a well kept garden may actually be more attractive as a front yard than a lawn, set back well over one hundred feet. Each street is planned with the design of these set-backs a part of the plan of the whole, with some adjoining houses set sideways to face this open area rather than the street.

Arranging the houses on the land in regard to their ideal orientation, the kitchen was normally placed east to secure morning sun without mid-day heat. However, it was often possible to place kitchens on the north or locate them in the shade of an existing tree to secure a grouping of the driveways and services of adjoining lots. Thus, instead of outbuildings being scattered indiscriminately across the properties, in many cases they adjoin on two homesteads, combining the open areas and increasing the livable qualities of both rear yards.

Some families may desire more rooms than the houses allocated to them provide. However, a house more costly than they can really afford may be actually a more serious burden than asking two children of the same sex to share a bedroom. The thought has been to provide the basis of the finest housing that each family can afford. As the family's circumstances improve, the expandable character of the plans always allows the addition of future rooms. Not only may the house be enlarged at a later time, but outdoor dining rooms, pergolas, extra garage space, and other improvements to the property may be made at the initiative of the owner.

Earthquake resistance and protection against termites have been combined in the design of the floors and footings for the houses. Concrete footings will be constructed in the usual way for walls and

bearing partitions. The top of these will extend slightly above ground and over all will be poured a reinforced concrete floor slab 4½ in. thick resting on the ground. A waterproof membrane will be placed between the slab and the ground to prevent moisture being absorbed by the concrete. A troweled finish will be given the top of the floor slab, the surface being colored with an integral pigment.

Construction joints will be made in the slab under partitions to prevent cracking by shrinkage in the concrete. A tough waterproof paper will be spread over the entire slab to prevent the concrete drying out too rapidly while it is curing. Redwood plates for the walls will be bolted to the floor slab with bolts embedded in the concrete. The plates will be laid directly on the waterproof paper and this will be allowed to remain under them, preventing moisture from beneath penetrating the wood, and protecting it against fungus and termites. As a further protection against termites the outer edge of the floor slab and the footings will be given a waterproof surface.

The concrete floor slab will act as a stiffener for the frame of the building to resist lateral forces and distortion produced by an earthquake. Wall and roof framing will be standard construction braced for earthquake resistance.

IF AN ARCHITECT

[Concluded from Page 36]

that the outlook is discouraging. If you can get a tide-over job for the next two or three years, grab it. But things are bound to come back. America is not going to stand still very long. Building will be resumed, and then you will all go back to work.

But in the meantime, what are the architects going to do? I wish I could tell you. You have different talents, different makeups. You who are interested in commercial architecture might well spend a year in the management department of a big real estate office. You who are a bit rusty on practical matters might attack a building company for a job. You who are advertising minded should affiliate yourself with an advertising firm and learn to be a copy writer or a contact man. I wouldn't advise any of you to go out to Hollywood on the chance of getting a job. None of you are quite handsome enough for that.

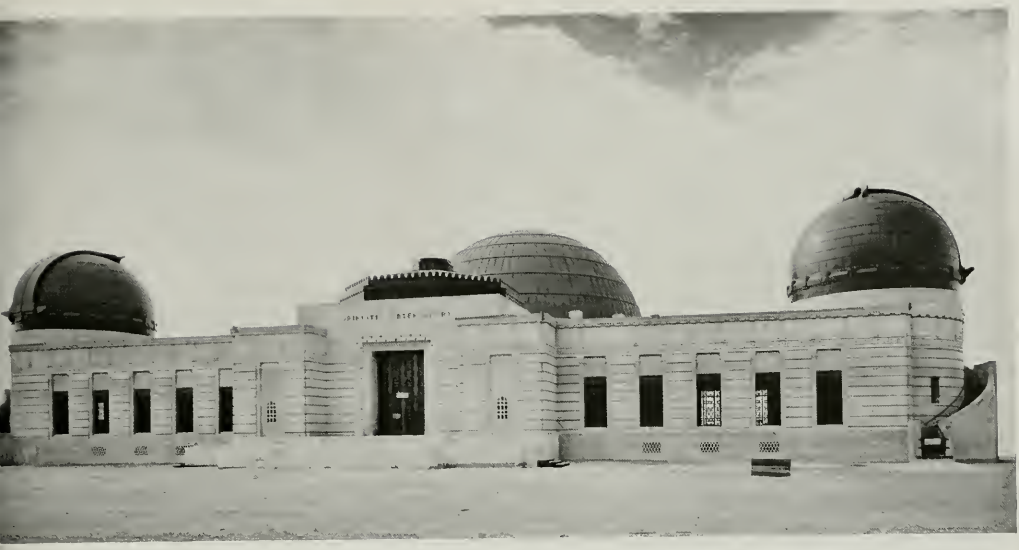
And don't be discouraged. Things will boom again. It's only that dreadful "meantime" that we worry about.

ARCHITECTURE IN ECLIPSE

[Concluded from Page 18]

structive imagination" but a realistic sense and understanding of the materials and methods necessary to give it actuality. Every artist must be a master of his medium, the painter of his pigment, his canvas or his panel, the sculptor of his marble, the physician even of his herbs. It won't do us any good to be hoity-toity about it. Also we must admit that perhaps ninety-nine percent of present day building is not architecture at all, though much of it might well be. Of all the prose written since the world began, only an infinitesimal part is literature.

Finally, what remains to be said about ethics that hasn't been said a thousand times already? The code of behaviour for architects is not different from the code applicable to any civilized human being. Silk purses are silk purses even though they may be empty, and sow's ears are just sow's ears.



GRIFFITH OBSERVATORY, LOS ANGELES, CALIFORNIA
John C. Austin and Frederic M. Ashley, Architects

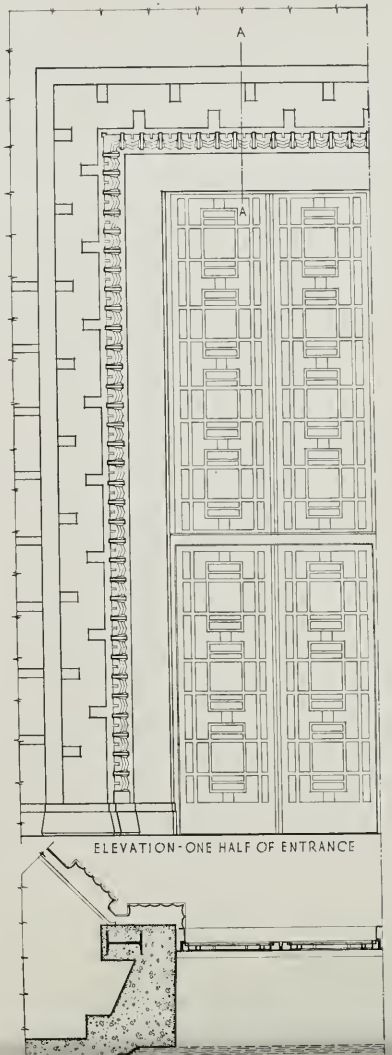
Observatory

ONE of the outstanding architectural accomplishments in Southern California in 1934 was the Griffith Observatory and Planetarium in Griffith Park, Los Angeles. Built of monolithic concrete, the structure has been capably designed to resist earthquake shocks. The domes have skeleton steel frames. Concrete has been used both as an architectural medium and a structural aid.

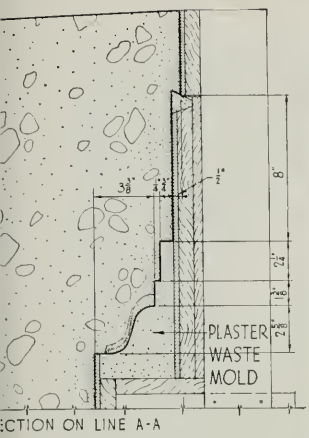
The accompanying photographs were taken before the planting. Completion of the landscaping will add materially to the appearance of this unique structure.

Ornamentation of the building is relatively simple but interesting, as may be observed by referring to the detailed drawings on another page.

The architects are John C. Austin and Frederic M. Ashley.



DETAIL, MAIN ENTRANCE, GRIFFITH OBSERVATORY, LOS ANGELES
John C. Austin and Frederic M. Ashley, Architects



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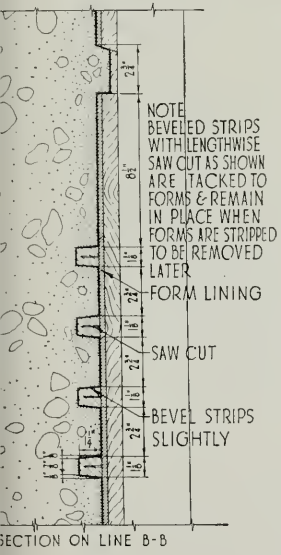

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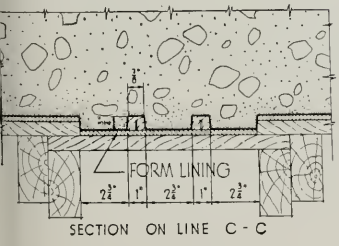

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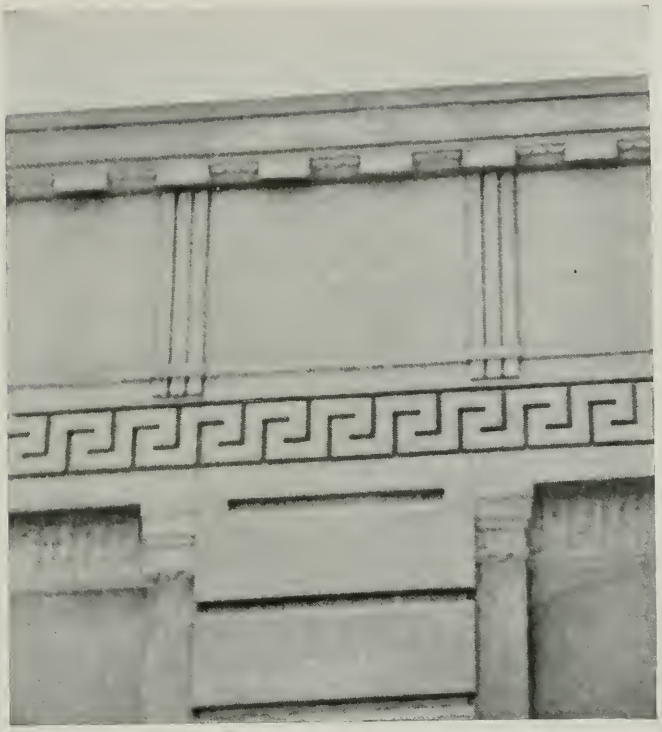
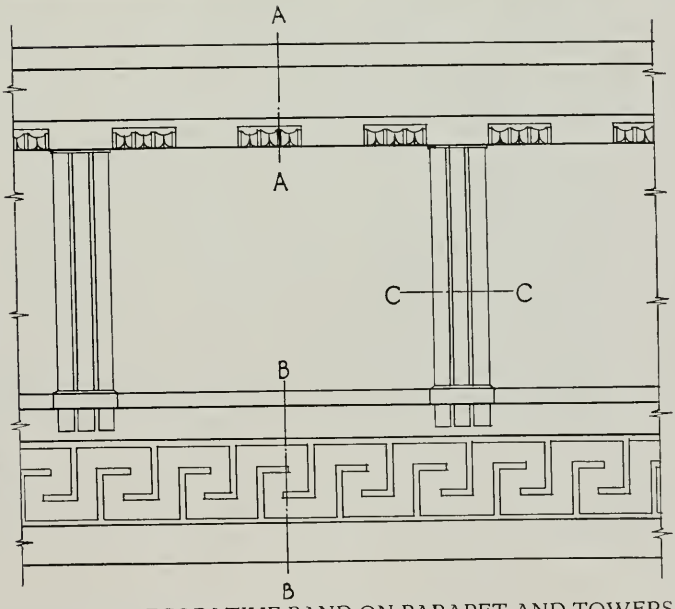




CONTINUOUS DECORATIVE BAND ON PARAPET AND TOWERS, GRIFFITH OBSERVATORY, LOS ANGELES

FLOWER POTS AND PLANTS, TILED WALKS AND ROOF, ALL HELP TO CREATE THE SPANISH FEELING

Termite Fight

by C. A. Kofoid

THINK over the items which entered into your noon meal and see how many of them came from the stored products of the plant world, such as sugar, starch, and vegetable oil, and how few, if any, even of the proteins used, came from animals with the power to digest wood. Even the fabled Dutchman's horse, with his economic diet of sawdust, never grew fat on that diet. It is only the termites and a few other insects who have successfully solved the problem of making use of the celluloses as food. This dependence of termites on cellulose as food is the basic cause of the termite problem.

Man's over-increasing use of lumber in the building industries provides killed wood which is more nutritious than naturally dead wood for termite food. In nature, wood-eating termites depend upon the fallen trees for their food supply. Man immensely increases the amount available, improves its quality, distributes it along his highways, and accumulates it in his cities. Thus civilization, with its enlarging use of cellulose, ceaselessly tends to increase the food available for the wood-eating termites.

*Radio talk given by Professor Charles A. Kofoid of the University of California, over the Columbia network in a nationwide broadcast on December 4, 1934. The facilities were contributed by the Columbia System and the speaker selected by Science Service of Washington D.C.

The domain of these termites is primarily in the tropics and warm-temperate zones. In the United States termites are widespread throughout the southern two-thirds of the nation, with outlying extensions to the Canadian border.

The termite lives in the dark, apart from the rest of the insect world, and gives but little or no evidence of his presence in the wood. It is only when internal dry rot and decay have broken down the surface of the wood, or when the building has given way because of accumulating structural weaknesses, or when the winged forms swarm, that the presence of the termite becomes manifest. However, in the case of the dry-wood termite, its presence is revealed by the pellets which are extruded from the burrows and gather in heaps on attic floors, or dropped out of infested furniture upon the carpet.

Lives a Secretive Life

Although the termite colony thus lives a secretive life, termites are constantly associated with other organisms of two distinct types on whose presence their very life depends. These are, first, the Protozoa within their digestive tract, which actually digest the wood chips which the termite has gnawed from the surface of its burrows. These microscopic animals extract from the wood some of its food values and

make them available as sugars to the termite. Thus the termite itself eats but does not digest the wood. Every kind of wood-eating termite has its own peculiar and highly specialized fauna of Protozoa which distend its gut with a seething mass of these useful messmates.

The wood provides the carbohydrates or fuel for running the termite machine, but not the proteins necessary for growth. Where does the termite get these essential proteins? Undoubtedly he regularly gets a considerable part of the necessary food elements, the beefsteak of his diet, out of a second group of organisms, the fungi which habitually grow in the walls of every termite burrow, spreading there as microscopic, invisible threads. Some of these fungi are responsible for the subsequent decay of wood attacked by termites. Dry rot often follows termite attack. Each kind of wood-eating termite has many different kinds of fungi, including the common bread molds, growing in the wood of his burrows.

There are three major kinds of termites in the United States; the subterranean termites, which work in the soil and creep upward into dwellings; the dry-wood termites, which enter knot-holes in trees, checks in poles, and crevices in the superstructures of buildings and work down toward the soil; and the damp-wood termites, which favor logs, poles, and wood buried in the soil. This third type is confined to the Pacific Coast. The subterranean termites range widely throughout the United States, and the dry-wood termites are confined to the southern states and the southwestern semi-arid region.

Termites Like Moisture

Termites live detached from a water supply, but they are delicately sensitive to the humidity of the air in their burrows. They regulate their ventilation and maintain a nearly saturated atmosphere. They habitually seek regions favored by moisture, though they can adapt their modes of life to desert conditions. The subterranean termite in the United States maintains connections with the moist ground, and from the soil enters the basement timbers of dwellings, wherever moisture favors the extension of his burrows.

The termite colony has three typical castes or kinds, with different structures and functions. These are: (1) the reproductive pair, called king and queen, the parents of the entire colony; (2) the soldiers, with heavy jaws for fighting, but unfitted for feeding or excavating; and (3) the young or nymphs, which in some kinds of termites are supplemented by a worker caste. The young and workers are doomed to do the drudgery of digging, feeding the soldiers, baby tending, the building of tunnels and towers, and keeping the burrows clean and in order. Thus in certain kinds of termites child labor prevails and in others a large slave caste is developed. In all termites an annual crop of winged forms is sent forth from the colony like propagandists to extend the species into new locations. A brief flight of these alates is followed by pairing and settlement, and digging into the earth or wood to establish a new base or home. For the whole of the first year the growth or the new colony is very slow. Less than a dozen members are present by the end of that year. The first child born is always a young soldier who is enlisted in military service when half grown. Elaborate social instincts control the life of this diversified colony. King and queen are fed and groomed by the workers or nymphs, who also tend the young in the early stages; the soldiers kill invading ants and foreigners from other colonies, even of the same species. Upon

the workers or young falls all the hard labor of the ordered life of the colony.

Termite Colonies

The development of a military caste, the exploitation of the young, the limitation and control of the reproductive function, and the substitution of the interests of the colony for the interests of the individual, are all characteristic of the ordered social life of the termites. There are many interesting parallels between the various types of social organization in termite colonies and the efforts of organization in the human hive. In both alike, organization develops at the expense of the freedom of the individual and operates in the interest of the group as a whole. The termite colony is successful because of this organization, but the body of the termite stands very low among insects in structural evolution of the individual.

A termite colony once established is potentially immortal. It can live and extend its burrows as long as it can maintain access to wood. Exploratory tunnels are driven to find new sources of food, and detached outlying groups develop supplemental reproductives and progressively become new colonies on the fringes of the parent group. The subterranean termite in the United States builds covered burrows of a dirt plaster over cement walls, and even up to the second story in buildings. It finds its way through these tunnels to bookshelves, documents in storage, and parts of the building remote from one another. Termites select particular pieces of wood in which fungi grow luxuriantly, and reject others, except for mere avenues of transit. You may have heard of the lazy boy in South Africa who left his trousers on the floor, and in the morning found only 10 buttons and a buckle. The termites had devoured the cotton garment.

The death of a king or queen is quickly made good by the development of supplemental king or queen. But so long as a primary or even a supplemental king or queen in full reproductive function is present in the colony, the development of any additional kings and queens from the full-grown young is inhibited by the secretions of the existing king or queen transmitted to the adolescent young by the grooming habit. The young acquire sexual maturity only after swarming from the parent colony. Thus termites exercise birth control.

This menace of the termites has been the subject of research by a Committee representing both science and industry formed at the University of California. The results of this investigation have been published by the University of California Press in a book, *Termites and Termite Control*, the second edition of which is now appearing. The proceeds of the sale of this volume are to be used for further research on termites. This book tells how each of the particular kinds of termite must be fought in a way suitable to its habits and its depredations.

Subterranean Termite

The subterranean termite is by habit attached to the ground. A dwelling protected against it should be elevated on concrete or other foundations. Termites burrow through lime mortar, but not through cement mortar. Foundations should extend at least a foot above the ground, to provide against the termites building tunnels over the cement to reach the wood above. All waste should be removed from under and around a dwelling. This includes the lumber in concrete forms, stumps, roots, and builders' rubbish. In termite-infested territory chemically treated wood, especially pressure-treated creosoted lumber, should be used as a preventive, or naturally resistant wood with a high extractive may be also used, especially in the basement structures and subfloor. In the case of the dry-wood termite prevention is much more

difficult, because of the fact that the winged pairs tend to creep into crevices around openings in the house, under shingles and tile, and into cracks or checks in lumber. Thorough painting and the screening of all openings assist in prevention of infestations. Chemically treated wood meets this menace more effectively.

Investigations have shown that all three kinds of termites are generally associated with certain fungi which have the uncanny faculty of utilizing arsenic in feeding, without being killed, in such a way that the highly volatile and very poisonous arsine gas is liberated from arsenic used in treating the soil or in chemically treating wood and wall board as a termite preventive. The Termite Investigations Committee is therefore strongly recommending against the use of arsenic in any form whatever in building materials, wall boards, or under and around dwellings, as a termite preventive. The reason for the recommendation is the arsenic hazard in fires and the potential danger of the production, by fungi introduced by termites, of the toxic arsine and the slow increase of arsenic in the human body to a toxic or lethal dose by continued inhalation of the arsine.

This fight against the termite is only one phase of the broader problem of man's ceaseless battle with the insect world for the use of the products of the plant world. This contest with the termite will tend to increase with man's ever widening use of cellulose and the extension of his civilization into the tropics.

Earthquake Hazards

And Protective Measures

by R. R. Martel, C. E.

ONE phase of the discussion of earthquake hazard, namely, the probability of their occurrence, lies within the province of geologists and seismologists. It may, however, be worth while to review sketchily some of the opinions that have been expressed at various times by such experts on the subject of susceptibility of various sections of this state to earthquake shocks.

In 1932, John R. Freeman wrote, "There are optimists who predict that Los Angeles is relatively safe against a shock of extreme severity . . . ." One of these optimists stated that, "The several faults of Northern California are generally parallel to the seashore, not widely separate, and not far from the abysmal scarp in positions where earth movements are more liable to occur than if they were inland, whereas on the other hand most of the fault lines of Southern California lie at considerable distance from the sea." Few of these optimists have been vocal since March 10, 1933.

A paper read before the Structural Engineers of California at their annual convention in Santa Maria.

For the purpose of establishing rates on earthquake insurance, the Board of Fire Underwriters of the Pacific has divided the state into four zones, wherein the rates vary as 1 to 1.25 to 1.50 to 2. This represents an appraisal of the relative probability of loss to the insurance companies from risks carried in the four zones. It attempts to combine, both the probability of occurrence and the intensity of earthquakes. Since Zone 3, which carries the highest rate, is limited to Imperial County, it is obvious that the zoning has been made mainly on the basis of probability of occurrence of earthquakes rather than intensity. If El Centro has twice as many earthquakes as Los Angeles, it does not follow that they will be twice as strong. Few, if any, engineers would design a theater balcony on the basis of the number of performances per day, or a railroad bridge on the basis of the number of trains which crossed it.

Omori, in 1923 pointed out to his class in seismology three areas in Japan which, according to historical and legendary evidence, had been immune from earthquakes. In 1927, the severe Tango earthquake occurred in one of these areas.

Earthquake records for California date back only about 250 years, and it is natural that during the early days of its occupation only the severe shocks which occurred in thickly populated areas were noted. There are nevertheless records of a few shocks of intensity VII or greater which have occurred in localities which are not usually thought of as being susceptible to them, such as Tulare County, 1856; Amador Valley, 1861; Fort Klamath, 1867; Kern River, 1868; Honey Lake Valley, 1885; Merced Falls, 1883.

Granting that from historical records, certain portions of the state have had a smaller number of destructive earthquakes than others, it cannot be said that they are immune or that shocks occurring in such regions will be less intense than those occurring elsewhere.

Turning to the consideration of variation in destructiveness of an earthquake in the meizoseismic area, the Millikan Report states, (See Millikan report, p. 3.) Evidence in support of this conclusion may be found in the Tokyo paradox, where the damage to masonry building on the harder soil uptown was somewhat greater than to masonry building on the soft soil downtown. Likewise the damage in the Belmont Shores district with its high ground water table, was less than in the central part of Long Beach. Again, the minor Santa Monica Bay earthquake of 1930, was considerably more severe at Chatsworth, which is at the edge of the San Fernando Valley, than at Compton, although both these places are about equidistant from the epicenter. This effect at Compton is a marked contrast to what took place in 1933, although its distance from the epicenters of the two shocks was about the same.
of 50 pounds per square foot. This corre-

The difficulty of establishing a simple and reliable yardstick of destructiveness is evident. Allowable soil pressure is simple but its reliability is dubious. A hard, firm lens extending over a few hundred square feet and surrounded by a large extent of soft soil could hardly be expected to be subjected to much less shaking than the much larger body of soft soil.

The examples previously mentioned do not controvert the general statement that destructiveness is greater on loose, water-soaked soil or made ground, than where fresh crystalline rock outcrops at the surface. They do indicate, however, that allowable soil pressure in the lower ranges is not a satisfactory index of destructiveness. It would appear that a distinction legitimately might be made for buildings on bedrock as compared with those on sedimentary soil.

It is apparent that there are two diametrically different ways by which earthquake damage to a building may be avoided. The first is to make it strong enough to resist the stresses produced as it moves with the earth; the second, to support it in such a way that it will remain at rest while the ground moves under it. There is a third intermediate method involving high viscous or friction damping as in the wicker basket, but which does not seem feasible with present day building materials. In applying the first method, the problem has usually been reduced to one of statistatics by making the simplifying assumption that the building was subjected to a steady acceleration uniform throughout its height. The preponderance of opinion seems to be that for low buildings, this is practical and reasonably satisfactory.

There is but limited data on the accelerations to be anticipated. The Coast and Geodetic records for the earthquake of March 10, 1933 gave value of .23g at Long Beach, .21g at Vernon, and .06g in Los Angeles. For the earthquake of October 2 the records gave values of .10g at Long Beach, .13g at Vernon, .10 to .17g at Los

Angeles, and .04g in the basement of the Hollywood Storage Building. In the penthouse of this 13-story building, the reported acceleration was .10g or two and half times the acceleration in the basement. The high values for the March 10th shock have been roughly verified by calculation of the force required to produce the observed damage on some simple structures, such as the Seal Beach smoke stack, .21g; the wall around the athletic field at the Woodrow Wilson School .10g; and the Armory roof, .17g. Three graduate students at the California Institute of Technology have made similar computations for over 40 elevated water tanks and have obtained values up to .25g with an average of about .10g. (It may be noted here that the period of these tanks was in the neighborhood of 1.5 seconds.) With these data and considering relatively low buildings, it is difficult to justify the use of a lower seismic factor than .1g.

As regards the taller skeleton frame buildings, opinion varies widely, because of differing concepts as to the dynamic response of these tall buildings to the earthquake. Of the three factors that are needed for a satisfactory dynamic analysis, the mass is fairly well known, the elastic and damping properties of the resisting elements can be found but are frequently idealized to simplify the calculations, and the character of the expected ground motion must be assumed. By changing the assumptions in the last two of these three factors almost any desired result may be obtained, and any amount of argument.

Omori, investigating the effects of the Tokyo earthquake of 1894, found that on the average the fracture of chimneys occurred at two-thirds the height and from this concluded that chimneys acted as a rigid rod subjected to a blow at the base. Since the values he averaged ranged from .25 to .94 the height, his conclusion is not valid. The reasonably satisfactory behavior of the Claus Spreckels (Call) building in 1906 is frequently used as an example of the inherent immunity of all tall, skeleton frame buildings. But the frame of this building was designed for a wind pressure sponds to a horizontal force of between 4 and 5% of g. It has often been asserted that the movement and, consequently, the acceleration of the top of tall buildings was less than the ground motion. This is not borne out by instrumental records taken in Japan nor by those few as yet obtained by the Coast and Geodetic Survey in California. On the other hand, the records obtained for a few buildings in Long Beach during the minor after shocks show less motion at the top than in the basement.

In all dynamic studies, regardless of whether the motion is assumed as regular and established or irregular and transient, the response is found to be a function of the period of the structure and the period, or periods, of the Fourier series into which the applied motion may be resolved. It has been assumed that with a very flexible first story, the effect of the upper stories on the period could be neglected. This is only approximately true for low buildings; the influence of first floor flexibility on period becomes less as the height is increased. It has quite commonly been said that the range of periods of destructive earthquake motions was between .5 sec. and 1.5 sec. or possibly 2. sec. It is now known that shorter periods of high acceleration and longer periods of large amplitude occur.

Out of this welter of contradictory facts of observation and analysis, departure from a simple admittedly arbitrary rule of design involving a single acceleration becomes complex and questionable.

There are indications that usually:

(1) The shaking on crystalline rock is less severe than on soft soil;

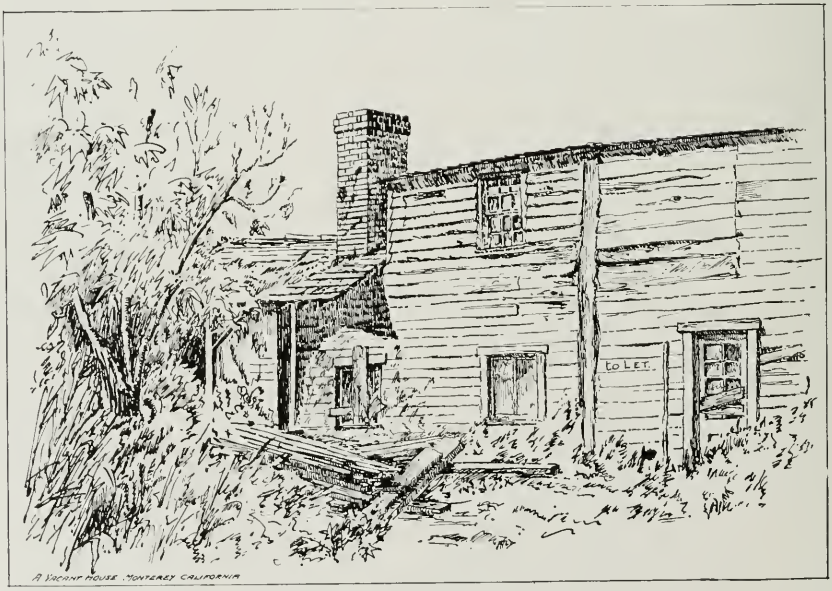
(2) The damage to tall buildings on rock, because of their inherent strength,

their longer periods, or reasons at present unknown, has not been proportionately as great as to lower buildings.

"Instead of the destructiveness of a shock being greatest close to a fault upon which a slip occurs, very commonly the damage has been greater at some localities much farther away from the origin of the earthquake. It is also clear that a violent disturbance on any one of several more distant faults may affect a locality more seriously than a less vigorous disturbance on a nearer fault."

"Probably the most important factor affecting variations in risk is the thickness and the character of the recently deposited and relatively unconsolidated alluvium; the thicker these deposits and the finer the grains of the material, the more subject it is to the development of large and destructive secondary waves during an earthquake. Similar intensification of an earthquake shock occurs where the groundwater is close to the surface and conservely the dryer the sub-soil the more stable will be the ground during a shock. Another variable element is the presumable but unpredictable occurrence in any earthquake of nodal and anti-nodal points at which surface vibrations produced by the earthquake reinforce or cancel eath other."

"The general risk from future shocks determined by variable combinations of these factors, including the location of the particular fault on which the disturbance may occur and the position of the epicenter on that fault, the intensity of the shock and its duration, the underlying rock formations, the depth and fineness of the alluvium, the distance to water, and possible nodal points, does not differ sufficiently to justify consideration of variations excepting where there is an unusually unfavorable combination of risk factors."



PEN SKETCH OF AN ABANDONED HOUSE IN MONTEREY
W. C. F. Gillam, Architect

INDEX OF TEXT AND ILLUSTRATIONS

The Architect and Engineer, 1934

A

	Month	Page
Architect, at the Dinner Table, (R. Turnor)	Apr.	21
Architects' Fees,	July	66
Architect, What is Wrong with the, (H. V. Magonigle)	Dec.	31
Architectural Education, (Ellis F. Lawrence)	July	31
Architectural Education, Looking Ahead, (Ellis F. Lawrence)	Aug.	19
Architectural Publicity, (B. G. Greengard)	Apr.	65
Architecture and Federal Activities	Feb.	32
Architecture, Landscape, in Industrial Planning (R. G. Hale)	Apr.	11
Architecture, Radical Changes in, for Next Generation, (A. C. Williams)	June	43
Adobe, A Modern House, (B. Reede Hardman)	Apr.	23
Advertising, a Federal Threat (A. P. Lasker)	Nov.	47
Air Conditioning (Wm. E. Leland)	July	41
A. I. A. President Says Public Lacks Architectural Knowledge	June	27
Apartment House, El Capistrano, S. F. (W. C. Ambrose)	Feb.	25
Astray in Europe (Nathaniel Blaisdell)	Dec.	41
Art, Science and Religion, (Elmer Grey)	Feb.	21

B

Bridge, Golden Gate, Tower	Feb.	47
Bridge, Golden Gate, Fender Design Modified	Feb.	48
Bridge, Golden Gate, Progress	Apr.	46
Bridge, Golden Gate, Design for Vertical Lift (Jos. B. Strauss)	Apr.	49
Bridge, Golden Gate, Out Where the Bridge Begins (C. P. Ninekirk)	May	57
Bridge, Golden Gate, Marin Tower	June	46
Bridge, Golden Gate, Reaching Spectacular Stage	June	47
Bridge, Golden Gate, Close Up of Marin Tower	July	50
Bridge, Golden Gate, Marin Tower	Aug.	55
Bridge, S. F.-Oakland, First Pier,	Jan.	43
Bridge, S. F.-Oakland, Construction, (E. A. Kelly)	Jan.	44
Bridge, S. F.-Oakland, Architectural Treatment	Mar.	48
Bridge, S. F.-Oakland, Twenty Per Cent Completed,	May	46
Bridge, S. F.-Oakland, Aerial View,	Sept.	10
Bridge, S. F.-Oakland, Model,	Oct.	44
Bridges Will Create Super City	Mar.	70
Bridge for Sacramento, Vertical Lift Type,	Mar.	51
Betrayed (E. D. Litchfield)	July	19
Brewery, Globe, Baltimore,	Oct.	51
Brick Vaults, Globe Brewery, Since 1744,	Oct.	53
Building Permits for April 1934 (C. H. Baker Co.)	May	64
Building Material Prices, Chart 1927-34	May	34
Building Costs, Keeping them Down,	Dec.	63
Building Program, Federal,	Dec.	71
Bureaucracy, Washington Criticised,	Nov.	17
Business Better, N. H. A Survey,	Dec.	45

C

Church, St. Dominics, S. F., Sketch (Arnold Constable) ..... Feb. 20
Church, First Baptist, Mayan, Ventura (Robt. B. Stacy-Judd) ..... Feb. 30
Church, Mission San Juan Bautista ..... June 10
Church, Mission San Juan Bautista, A New State Monument (Mrs. E. N. Brown) ..... June 11
Church, Mission San Juan Bautista, (Irving Morrow) ..... June 13
Church, Grace Cathedral, S. F. (Lewis P. Hobart) ..... Dec. 10
Church, Grace Cathedral, Gothic Design, (Homer Hadley) ..... Dec. 13
Church, Grace Cathedral, Windows (C. J. Connick) ..... Dec. 23
Church, Grace Cathedral, Concrete Supplants Stone (Curtis Smith) ..... Dec. 27
Chain Store Opportunities, (G. A. Anderson) ..... June 21
Chimneys, Brick, (A. L.Brinkman) ..... Nov. 19
Clients News, From Old Houses (A. C. Guth) ..... Aug. 68
Club, Automobile of S. Calif., L. A. (Roland E. Coate) ..... Apr. 19
Columbia Steel Co., Plant Guests, ... Mar. 54
Competition, Small House, (Evalyn H. Merrill) ..... Oct. 43
Competition for Suburban Home (W. C. Hays) (Winning Designs) ..... Feb. 11
Confer, Frederick L., Interesting Homes by, ... May 11
Coffee Shop at 111 Sutter St., (W. C. Ambrose) ..... June 33
Concrete Steel Construction for Dairy Barn, ... June 49
Conservation Work, Emergency, ... Mar. 65
Contractors License Bureau, ... Mar. 72
Contractor Must Control His Own Work, ... May 69
Contracts Must be Specific ..... Aug. 53

D

Dormitory, Lagunita Court, Stanford (P. I. Baker) ..... July 43
Drawing Perspective, Shorter Methods (L. J. Smith) ..... Jan. 41

E

Earthquake Hazards and Protection (H. L. Nishkian) ..... Nov. 23
Earthquake Law and Fire Protection ..... Jan. 67
Earthquake Law, State Architect Clarifies (Geo. B. McDougall) ..... May 48
Earthquake Resistive Construction (C. H. Kromer) ..... Apr. 51
Electrical Industry, Notable Developments in (J. Liston) ..... Jan. 51
Elevator Doors, Sav. Society, Shanghai, China ..... Jan. 50
Engineers Favor Service, (H. J. Brunnier) ..... Nov. 43
Escalators, Otis, Improved Design, ... May 52
Explorers, Specialized, ... Aug. 66

F

Factory, So. Calif. Edison, Long Beach ..... Apr. 18
Factory, Marshall Steel Co., Oakland (Alben Froberg) (F. W. Jones) ..... May 20
Factory, Scott Buttner, Oakland, ... May 62
Factory, Geo. R. Borrman Steel, Oakland (W. R. Yelland) ..... Aug. 17
Ferry, Key Route, (Kent & Hass) ..... Jan. 10
Ferry, Richmond, San Rafael (Arne Kartwold) ..... Jan. 24
Field and Riley Acts Defined (Earl Cope) ..... June 53
Free Sketches, What Fools These Mortals Be, ... Feb. 31
Foundations, Why Bldgs. Settle and Crack, ... Oct. 55

H

Hetch Hetchy Water Tower (C. G. Lundgren) ..... Nov. 8
Hetch Hetchy, An Engineering Triumph, (M. M. O'Shaughnessy) ..... Nov. 34
Hetch Hetchy Water Temple (C. G. Lundgren) ..... Nov. 41
Highway Drainage Structures (T. E. Reinhardt) ..... May 33
Historical Building Survey by Architects ..... Feb. 31
Historical American Survey #1—Early Calif. Architecture (Morrow) ..... June 13
Historical American Survey #2—Adobe Houses (Morrow) ..... July 23
Historical American Survey #3—Vallejo and Petaluma, Adobe (Morrow) ..... Aug. 25
Historical American Survey #4—Churches, Sonora, Fort Ross (Morrow) ..... Sept. 23
Historical American Survey #5—Jolon and San Antonio Missions (Morrow) ..... Oct. 29

Historical American Survey #6—San Carlos Church, Monterey (Morrow) Nov. 29
Historical American Survey #7—Sherwood Ranch, Salinas (Morrow) Dec. 35
Homes, Demand for Cheaper and Better May 31
Homes, Better, (Herbert J. Mann) Oct. 11
Home Building Revival (Jno. H. Fahey) Oct. 72
Horizontal Sheathing, Lateral Resistance, June 57
House, Old Adobe at Albany, Calif. (Arne Kartwold) Jan. 20
Housing, New Objectives in (Chas. H. Cheney) May 25
Housing, in a Slumless City (C. F. Gromme) June 35
Housing, A Radio Talk, (A. J. Evers) June 65
Housing the Itinerant (Vincent Brown) Sept. 21

J

Jail, City and County, S. F., (Homer F. Hadley) Oct. 23
Jail, City and County, S. F., (A. F. Roller and Dodge Riedy) Oct. 22
Jail, City and County, S. F., Structural Problems (H. J. Brunnier) Oct. 27

K

Key System Pier Terminal (Kent & Hass) Jan. 10

L

Leaning Tower of Pisa—Reason Explained May 23
License Needed to Advertise, Oct. 46
Living with Him, Aug. 11
Loans, Building, How to Obtain Them, Sept. 29

M

Masonic Temple, Oakland, Modernized (E. T. Foulkes) Sept. 15
Mayan, All American Architecture, (No. 4) (Robt. B. Stacy-Judd) Jan. 29
Mayan Architecture, Some Local Examples (Robt. B. Stacy-Judd) Feb. 21
Modernization, Anglo Cal. Bank, S. F. (S. Heiman) Aug. 33
Modernization, (E. T. Foulkes) Sept. 11
Metal Work, Protective Coatings for (E. A. Hurst) Apr. 29
Mortgages, Appraisal for Refinancing Jan. 39
Mortar Parks as Related to Brick Work (L. A. Palmer) Sept. 47
Mountain Cabin Competition, L.A., June 29
Musings of a Philosopher (C. N. Ninekirk) June 71

N

Nails, (H. E. Hall) Aug. 47
Noise, (W. O. Osborn) Sept. 53

O

O'Connor, Moffatt & Co., Top o' the Town House (O. A. Deichmann) Oct. 36
Obsolescence, Avoid It, Jan. 75
Offices Modernized, J. Walter Thompson Co., Chicago Sept. 36

P

Portals Sept. 37
Property Inventory—60 Cities Selected Jan. 63
Prosperity—Can Uncle Sam Legislate It (A. W. Robertson) Feb. 62

R

Residence, Mr. Armstrong, L. A. (H. O. Sexsmith) Oct. 10
Residence, H. H. Bishopric, Piedmont, (W. R. Yelland) Aug. 10
Residence, Raymond Bowers, Berkeley (F. L. Confer) May 12
Residence, W. R. Downie, L. A., (F. W. Green) Oct. 14
Residence, Harry Hindman, Lafayette, (Hardman & Russ) Apr. 25
Residence, E. S. Hudson, San Mateo, (Chester Treichel) Dec. 49
Residence, Interesting, (F. L. Confer) May 11
Residence, G. W. Lubowski, Berkeley, (W. R. Yelland) Aug. 14
Residence, Mayan, T. A. Willard, Beverly (R. B. Stacy-Judd) Jan. 31
Residence, Mayan, Pismo Beach, (R. B. Stacy-Judd) Feb. 24

Residence, in Mediterranean Style, Apr. 20
Residence, Piedmont Pines, (F. L. Confer) May 19
Residence, T. J. Parker, L. A. (Gable & Wyant) Oct. 16
Residence, Perspective, San Marino (G. R. Colcord) Oct. 17
Residences in Seacliff, Models (Geo. M. McCrea) June 20
Residence, Southern Calif., Dec. 34
Residence, M. C. Wantz, Berkeley (F. L. Confer) May 10
Reconditioning (A. C. Holmes) Sept. 19
Records, (J. B. Branagan) July 51
Real Estate Facts Feb. 63
Rock Plant near Richmond (Arne Kartwold) Jan. 16
Rock Bunkers, Richmond, (Arne Kartwold) Jan. 38
Rome and a Town in Spain (A. C. Williams) Feb. 19
Restaurant, Black Sheep, Berkeley (W. R. Yelland) Nov. 22

S

School Program in San Francisco, Jan. 59
School Architects Named Mar. 66
School, Fullerton Union High, Apr. 17
School, Montezuma Mt. for Boys (Requa & Jackson) (F. J. Taylor) Nov. 11
School, Pomona College, Claremont, Apr. 16
School, Geo. Stoneman, San Marino, (Marsh, Smith & Powell) July 10
School, Geo. Stoneman, San Marino (Homer Hadley) July 11
School, Vallejo Junior High, (F. H. Reimers) Feb. 10
School, Vallejo Junior High, (E. L. Cave) Feb. 11
Store Modernized, Hollywood (H. Roy Kelley) Sept. 11
Store Modernized, Jonas Bldg., Oakland (E. T. Foulkes) Sept. 12
Store Modernized, Abramhamson Bldg., Oakland (E. T. Foulkes) Sept. 13
Store Modernized, Park Bldg., Oakland (W. C. Hays and W. G. Corlett) Sept. 14
Store Modernized, Natilda Brown, Oakland (E. T. Foulkes) Sept. 16
Store Modernized, Mabel Birely, Hollywood (H. Roy Kelley) Sept. 17
Store, Chain, Opportunities (G. A. Anderson) June 21
Sand Blasting (C. E. Avery) Aug. 41
Sketches in France (Nathaniel Blaisdell) June 23
Sketch, (Chas. E. Peterson) Aug. 50
Sketch, Perugia, (J. M. Reeves) Oct. 42
Salvation, The Architects Opportunity, (E. J. Russell) Oct. 19
Standardized Houses at Lower Cost—a Fallacy (H. V. Walsh) Jan. 17
Steel Frames (Phillip I. Baker) July 43
Studio Building, Miss M. Coleman, Pasadena (Elmer Grey) Jan. 25
Subsistence Homesteads (David Weeks) Aug. 51

T

Termites (A. H. Memmler) Jan. 53
Termites and Termite Control (A. A. Brown) Feb. 33
Termites and Termite Control (A. A. Brown) Mar. 35
Termites and Termite Control (A. A. Brown) Apr. 33
Termites and Termite Control (A. A. Brown) May 39
Termites and Termite Control (A. A. Brown) June 39
Termite Problems (A. A. Brown) Aug. 39
Termites, Failure Due to Specifications, (A. A. Brown) Sept. 39
Termite Problems, Arsene Not a Termite Barrier (A. A. Brown) Oct. 47
Termites, Swarming Time (A. A. Brown) Nov. 27
Termite Remedies (A. A. Brown) Dec. 52
Theater, Fix Arlington, Santa Barbara (Wm. A. Edwards) Sept. 46
"Tumbling Home"—A New Mathematical Curve (E. I. Freese) Jan. 21
Tunnel, Broadway Project, (Wallace Boggs) July 53
Tunnel, Broadway (Frederick Hamilton) Dec. 57

U

University of Hawaii Apr. 10

W

War Memorial, Mayan, North Dakota (R. B. Stacy-Judd) Feb. 22
Written Orders or No Pay (Leslie Childs) Aug. 58

NEW TYPE OF WEIGHT HUNG WINDOW

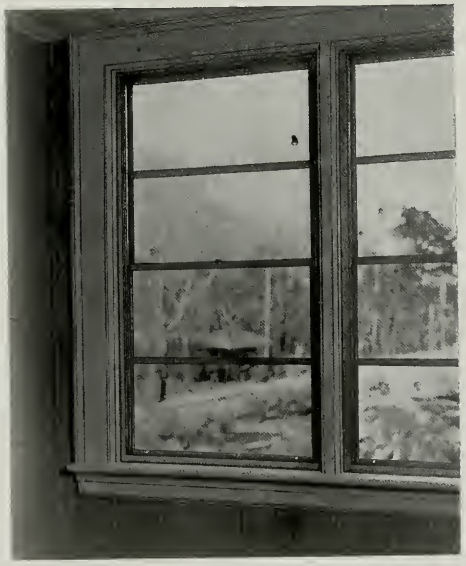
AN advanced type of weight-hung window, made of aluminum and designed in simple, striking lines for wide residential use, is proving one of the sensations of the current exhibition of Contemporary American Industrial Art, at the Metropolitan Museum in New York City.

This new window—built into a modern living room designed by John W. Root, of the firm of Holabird and Root, architects, is typical of the tremendous progress made in industrial design since the last exhibit in 1929. It has aroused widespread interest on the part of the general public as well as among architects, builders, and designers, because of its remarkably easy action, distinctive beauty, and compact construction. Moreover it may be produced so economically that it will be suitable for medium or low-cost houses.

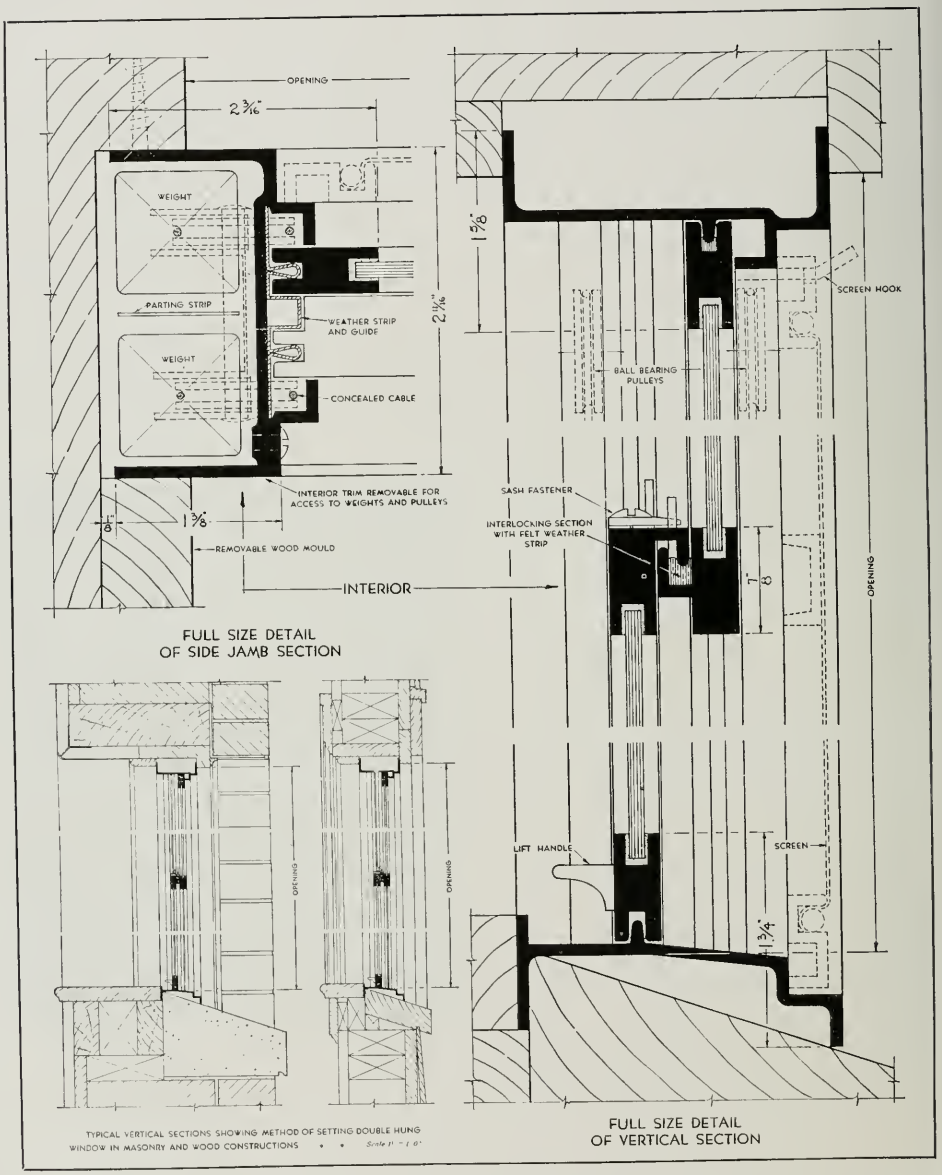
Sash, frame, and weights are built into one unit, glazed and ready for quick installation. Wide mullions, hitherto considered unavoidable between double-hung windows, are reduced from approximately 5½ inches to 1 inch. Those narrow mullions, together with narrow sash members and frames, admit more daylight for any given window size than does ordinary construction.

Many unique advantages are claimed for the new window by its makers, The Kawneer Company, of Niles, Michigan, and West Berkeley, California, which holds full patents on design and construction. Shrinking, swelling, warping, rattling, rusting, and rotting out have been eliminated, and thus the causes of most window difficulties removed. The solid aluminum sash and frame members withstand the elements indefinitely without further protection or renewal. Upkeep and maintenance expense have been reduced to an absolute minimum, if not altogether done away with. Although sash may always be operated with surprisingly slight effort, they fit snugly against the frame, slide on integral weatherstrip guides, and effectively keep out rain, wind, or dust.

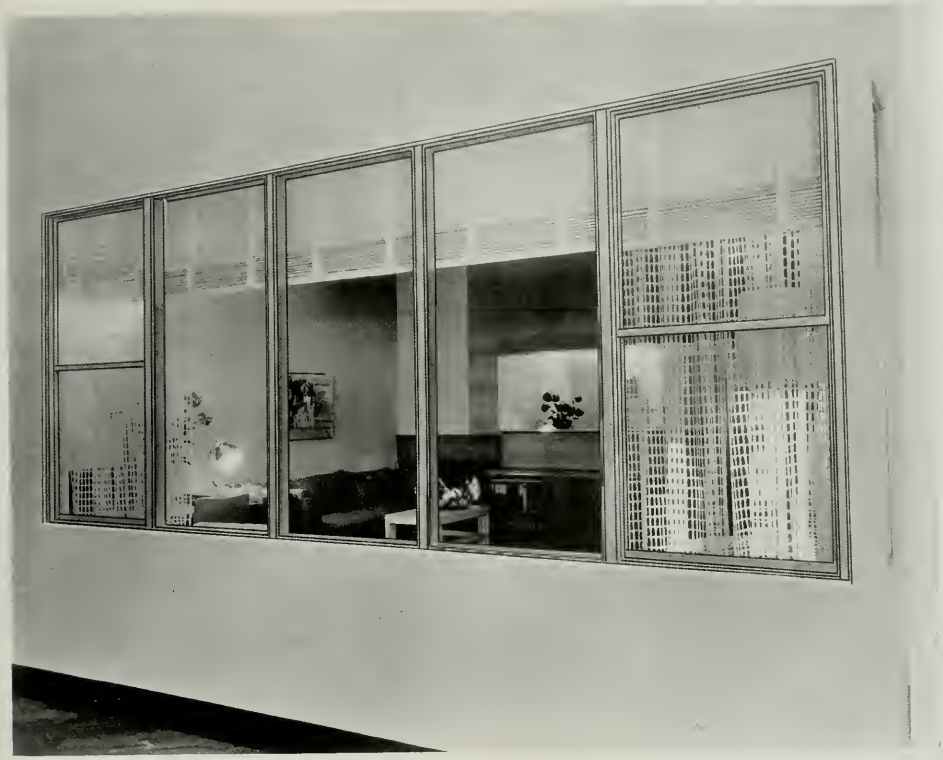
Because of its simplicity of construction and design this new window harmonizes with the most modern domestic architecture, as well as with all conventional styles.



Installation completed and trim applied. Note narrow mullion and unobstrusive hardware. Sash may be raised or lowered with little finger.



DETAILS OF KAWNEER NEW TYPE ALUMINUM WINDOW



Close-up view of new-type aluminum window at Exhibition of Contemporary Industrial Art. Photograph courtesy The Metropolitan Museum of Art.

Sash come glazed and installed in frame, ready for quick, one-man installation after plastering has been completed.

Carpenter attaches metal frame to simple wood sub-frame using ordinary wood-screws. Removable strip makes weights easily accessible.

« « « « With the Architects » » » »

PUBLIC INFORMATION

Representatives from the State Architects' Association, the Producers' Council and the Federal Housing Administration in Northern California, were on the air Tuesday, January 8th in a three-quarters of an hour hook-up for the purpose of explaining to the public the provisions of Title II of the National Housing Act. The speakers included C. E. Berry, W. I. Garren, B. F. Blair and Albert J. Evers. Before the broadcast quite a number of architects dined at the Engineers' Club, with William Mooser, presiding. Later the gathering listened-in to the broadcast.

COURT HOUSE ADDITION

Plans have been completed by Ernest J. Kump, Rowell Building, Fresno, for a four-story reinforced concrete addition to the Tulare County Court House at Visalia. Drawings for the Municipal Auditorium at Fresno by the Allied Architects of that city, have also been completed. F. W. Kellberg of San Francisco, is the structurual engineer.

POSTOFFICE BUILDINGS

Bids are to be opened on various dates next month for construction of new Post Office buildings in the following cities, from plans by Federal architects: Compton, Roseville, North Hollywood, San Mateo, San Rafael, Oceanside, Huntington Park and Bell, California; Winslow, Phoenix, Arizona, and Puyallup, Washington.

STOCKTON CANNERY

Ellison & Russell, engineers in the Pacific Building, San Francisco, have completed plans for a cannery, 180x160′ to be built in Stockton for the Pacific Can Company, 290 Division Street, San Francisco. The building will be of timber construction. There will also be a boiler house and cafeteria.

OFFICE BUILDING CHANGES

Gardner A. Dailey, 210 Post Street, San Francisco, has completed plans for alterations to the nine-story building at 130 Bush Street, San Francisco, which has been purchased by the Limited Mutual Insurance Company to be used as an executive office building. Improvements will include installation of a new elevator and a considerable amount of office partition work.

OAKLAND COURT HOUSE

Contracts totalling over $1,500,000 have been awarded for the new twelve-story Alameda County Court House in Oakland. The main portion of the work has been let to George Wagner and K. E. Parker Company, with the Pacific Coast Steel Corporation successful bidders for the structural steel. The architects on the project are to receive eight per cent commission for their services.

LIVESTOCK BUILDINGS

W. D. Peugh, architect, 333 Montgomery Street, San Francisco, is preparing working drawings for a one-story reinforced concrete livestock building to contain a horse show arena, ring for livestock display, stalls, etc., in Visitacion Valley, San Mateo County. The first unit will cost approximately $700,000. The project is sponsored by the San Francisco-San Mateo Agricultural District.

BERKELEY RESIDENCES

Plans for two residences in Berkeley have been completed the past month. One is to be erected on Ridge Road for the dean of the Church Divinity School of the Pacific, W. H. Ratcliff, Jr., architect; the other is an English style dwelling at Cedar Street and Leroy Avenue for Mrs. Helen Moore, Miller & Warnecke, architects.

SAN FRANCISCO MINT

Plans for the new San Francisco Mint, at Buchanan Street and Duboce Avenue, San Francisco, are being prepared in the office of the Procurement Division, Public Works Branch, Treasury Department, Washington, D.C. It is expected bids will be advertised for the $1,250,000 structure early in the spring. San Francisco architects had hoped to secure this commission.

SHASTA COUNTY SCHOOL

O. A. Deichmann, 110 Sutter Street, San Francisco, has completed drawings for one-story timber construction school building to cost $15,000 for the McArthur School District, Shasta County.

SANGER SCHOOL DISTRICT

W. D. Coates, Jr., Rowell Building, Fresno, is preparing drawings for a one-story frame and stucco school building for the Sanger School District, estimated to cost $45,000.

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MONTANA CHAPTER

Reports from the Montana State College, Bozeman, are to the effect that the members of the Montana Chapter, A.I.A., are greatly enthused over the promised activity in housing this year. The Federal housing program, it is felt, will be a great help to the profession.

Officers of the Montana Chapter are: President, Chandler C. Cohagen, Billings; Vice-President, Fred A. Brinkman, Kalispell; Secretary-Treasurer, Wm. R. Plew. Other members are: John G. Link and William H. Reed, Jr., Billings; A. V. McIver, George H. Shanley and J. van Teylingen, Great Falls; Fred F. Wilson and G. G. Cottier, Bozeman; N. B. DeKay, Helena; C. J. Forbis, Missoula; and Tom C. Haire, Seattle, Washington.

SCHOOL PLANS COMPLETED

Albert F. Roller, Crocker-First National Bank Building, San Francisco, has completed plans for three new school buildings to be built in Daly City, San Mateo County, for the Jefferson School District. Funds amounting to $100,000 are available.

THIS MAY INTEREST YOU

Some architect who wishes to cut down his overhead (and there are probably quite a few) can obtain excellent office space at minimum cost if he will call on Fabre and Hildebrand, architects, French Bank Building, San Francisco.

EXTENSION TO TERMINAL

The Engineering Department of the Oakland Port Commission has completed plans for a 300-foot extension to the Outer Harbor Terminal Wharf in Oakland for which there is available $160,000.

ALAMEDA WAREHOUSE

Monson Bros. have been awarded a contract to build a one-story wood trussed and corrugated iron warehouse, 100x200′ in Alameda for the Alaska Packers. The approximate cost is $30,000.

ACADEMY IN ROME COMPETITIONS

The American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting, sculpture and musical composition.

In architecture, the William Rutherford Mead fellowship is to be awarded; in landscape architecture, the Kate Lancaster Brewster fellowship; in sculpture, the Rinehart fellowship and in musical composition, the Walter Damrosch fellowship.

The competitions are open to unmarried men not over 30 years of age who are citizens of the United States. The stipend of each fellowship is $1250 a year with an allowance of $300 for transportation to and from Rome. Residence and studio are provided without charge at the Academy, and the total estimated value of each fellowship is about $2000 a year.

The Academy reserves the right to withhold an award in any subject in which no candidate is considered to have reached the required standard.

The term of the fellowship in each subject is two years. Fellows have opportunity for extensive travel and for making contacts with leading European artists and scholars.

IN THE UNIVERSITIES

One hundred and five students are enrolled in the Department of Architecture, University of Washington, Seattle, for the 1935 college year under Professor Harlan Thomas, head of the department. Other members of the teaching staff are: Associate professors—Arthur Herrman and Lance E. Gowen; assistant professor—Lionel H. Pries; instructor—Henry Olschewsky; assistant professor in engineering — S. I. Sergev. Flora Allen is secretary of the department. Sixteen students are taking courses in interior decorating.

Twenty-eight students are enrolled in the Department of Architecture, Montana State College, Bozeman, according to Professor William R. Plew, head of the department, which is large enough to take care of the professional training needed in the state.

Chapter and Club Meetings

NORTHERN CALIFORNIA CHAPTER

Northern California Chapter, A.I.A., met in regular session at Marquard's, San Francisco, at 6:30 P.M., November 27, Albert J. Evers presiding.

Those present were: John Bakewell, Jr., Morris M. Bruce, Edward L. Frick, Wm. I. Garren, Ellsworth E. Johnson, Thomas J. Kent, Kendall J. Masten, Harry M. Michelsen, James H. Mitchell, Irving F. Morrow, Warren C. Perry, Chas. F. B. Roeth, Stanton D. Willard, Alfred C. Williams, Wm. Wilson Wurster.

The minutes of the October meeting were approved as published.

Action was taken upon the amendment of ARTICLE 1—SECTION 4 and ARTICLE 3—SECTION 2 of the By-Laws as previously introduced and published to the membership. Upon motion of Mr. Roeth, seconded by Mr. Kent, each amendment—copy thereof being recorded in the minutes of the October meeting—was passed unanimously.

A report pertaining to a modernization exhibit was presented by the exhibit committee and discussed. A motion by Mr. Garren, with amendment by Mr. Bakewell, asked that the committee reconsider its report and authorized it to proceed immediately to bring about an exhibit of creditable size and merit in which would be included worthy commercial work as well as residential. The motion was carried unanimously.

Requirements for government underwriting on new homes under Title 2 of the National Housing Act were outlined by Mr. Evers. The Chapter members were advised that design, location and adequate contract documents will bring preferment in the financing; also that coverage will be restricted to 30% on interior lots and 40% on corners.

The program was presented by the committee on education under the direction of Irving F. Morrow, chairman.

Stating that at the last convention of the Institute a new program on education was adopted and referred to the Chapters with reference to the preparation to practice architecture, Mr. Morrow carefully explained the six-point instruction in this respect.

Reaction to this plan was expressed by the following members, representative of institutions directly concerned with the training or examination for the practice of architecture:

Warren C. Perry, Director of the School of Architecture of the University of California, admitting that the schools cannot pretend that their graduates are fitted for practice, stated that they, at least, are sent forth with a fair conception of the aims which are paramount in the profession.

Edward L. Frick, representing the Beaux Arts School of Design through the San Francisco Architectural Club, spoke of the opportunity therein offered to draftsmen who have no chance to attend a university. He recommended that the Chapter establish a closer contact with the Club in helping these men along.

Chas. F. B. Roeth, Member of the State Board of Architectural Examiners, would hesitate to suggest that the local board accept the standards of the National Council of Registration Boards because this state is in advance of many others in its requirements and holds its candidates to higher standards than those of the Council.

With mention of the importance of proper guidance during apprenticeship, he deplored a laxity in schools to inculcate a higher sense of professional integrity in students which would remain with them during their later training and practice.

John Bakewell, Jr., spoke of the relationship between the architect and his draftsmen. He felt that the man in the office learns mostly from his companions to a certain stage of being a good draftsman. To this point, the architect, directly, or indirectly through his staff, has been instrumental in his development but for further grounding he must thereafter supplement with higher instruction in university or atelier.

Mr. Perry afterward pointed out that in certain offices of higher caliber, mentorship is not as important as for those men—many of them able—who drift from office to office through inconstance of work.

A general discussion of the subject followed these talks until adjournment.—J.H.M.

SOUTHERN CALIFORNIA CHAPTER

A record breaking attendance marked the December 11th meeting of Southern California Chapter, American Institute of Architects, at Taix restaurant, Los Angeles. Officers for 1935 and delegates to the national convention were elected, and several interesting reports were read.

Following an endorsement of the present Chapter administration by H. Roy Kelley, wherein he gave a detailed account of what has been accomplished, a unanimous ballot was cast for the incumbent officers: Sumner Spaulding, president; Ralph C. Flewelling, vice-president; Eugene Weston, Jr., secretary; Leland F. Fuller, treasurer, and Henry Calton Newton, director for the three-year term.

Delegates and alternates to the national convention, which will be held in Milwaukee, Wisconsin, at a date to be determined later, were elected as follows: A. M. Edelman, Myron Hunt, Ralph C. Flewelling, Reginald D. Johnson, Henry Carlton Newton, George Adams, Samuel E. Lunden, Roland E. Coate, S. B. Marston and G. Stanley Wilson.

Provisions of Title II of the National Housing Act were explained by David J. Witmer, who was recently appointed by the Federal Housing Administration as chief architectural supervisor for the Los Angeles district, which covers Southern California. One architect has been assigned to each of 62 localities throughout the country, in which underwriting offices will be located.

Mr. Witmer's report outlined the thorough manner employed in selecting architects for these positions, which are an important part of the underwriting division and which have to do with technical standards, or with the approval of plans submitted with applications for building loans, and with the appraisal of existing buildings.

The whole object of the act, according to Mr. Witmer, is to establish a uniform system of mortgage financing for residential properties; to provide liquid loans at reasonable rates and terms, and to improve housing conditions and standards.

That the administration in Washington has recognized the importance of the architect in this picture, is indicated by placing Miles L. Cohen, a Chicago architect, in the key position. Mr. Cohen has been appointed chief of the technical division under Title II.

George Adams outlined how leads, provided by SERA canvassers, are sent in rotation to members of the Better Housing Campaign, some going to architects and others to contractors. To date, about 60 architects have registered at campaign headquarters. The campaign is to continue until March.

Samuel E. Lunden, vice-chairman of the housing committee, reported that plans are under way for a proposed housing show such as has been promoted in other communities with a great deal of success. The matter has been discussed with a number of people engaged in different businesses, Mr. Lunden stated, and the construction of a group of buildings to house the show may result.

A report was made on a schedule of architects fees as approved and adopted by the executive committee of the Chapter.

Henry L. Gogerty, recently elected an associate member of the Chapter, was introduced by Carlton M. Winslow.

WASHINGTON STATE CHAPTER

Thirty-five members of the Washington State Chapter, A.I.A., attended a Christmas party given Thursday evening, Dec. 13, at the home of J. Lister Holmes, 615 36th Avenue North, Seattle. At a short business session the nominating committee recommended the 1935 official roster to be as follows: President, Robert F. McClelland, Seattle; first vice-president, Lance E. Gowen, Seattle; second vice-president, Nelson J. Morrison, Tacoma; third vice-president, G. Albin Pehrson, Spokane; secretary, Arthur Hermann; Seattle; treasurer, Albert M. Allen, Seattle; new members of the executive board, B. Marcus Priteca, Seattle.

Taking the government out of the architecture business was the chief topic at the November meeting, with Vice-President Lance E. Gowen directing deliberations. President McClelland had previously named a committee to prepare an advisory report on this problem, the members being Chairman Carl F. Gould, B. Marcus Priteca and Lance E. Gowen of Seattle, and Roland E. Borhek of Tacoma. This committee was instructed to work in conjunction with the national committee and to confer with the two senators and six representatives from Washington for the purpose of outlining legislation for the protection of the private practice of architecture.

LECTURE ON EARTHQUAKES

The San Francisco Architectural Club announces a lecture by R. S. Chew, consulting engineer, on "Earthquakes and Their Approximate Effect on Buildings, for the Architects' Consideration", at the club rooms, 130 Kearny Street, Wednesday evening, January 23, at 7:30.

Recent legislation on lateral force laws lends added importance to this lecture.

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FAVORS PRIVATE ARCHITECTS

The construction industry of Washington offered its united support to the American Institute of Architects in its effort to induce the Treasury Department of the Federal Government to retain local architects on Federal work.

With approximately 250 members of the construction industry in attendance, the Washington Construction League, in session at Seattle, unanimously adopted a resolution strongly favoring the employment of local architects on Federal projects costing more than $60,000 and pledged to the American Institute of Architects its cooperation in obtaining necessary legislation to bring about employment of local architects on Federal buildings.

As the first step, the League launched a drive to obtain in the national Congress a standing committee on construction.

A resolution was passed, reading as follows:

WHEREAS: With few exceptions all government buildings are now being designed in Washington, D.C., under the direction of the Treasury Department, and other Bureaus, and

WHEREAS: There are competent architectural organizations in this state as in practically every state of the Union, where plans for Federal buildings to be built within the state can be prepared, employing their staff of draughtsmen and of engineers and the purchasing of supplies, payment of rent, living expenses, etc., and

WHEREAS: Former experience has shown plans so prepared make for expedition, economy in their construction, and the more intelligent use of local building materials, and better adaptation to the locality of appropriate design, and

WHEREAS: Since the depression the amount of private new building construction has been so small that 90% of the architects and draughtsmen are now out of work, many in dire distress,

THEREFORE, NOW BE IT RESOLVED: That the Washington Construction League in convention assembled this the 11th day of December, 1934, strongly favor the employment of local architects upon Federal projects within the state costing over $60,000, and

BE IT FURTHER RESOLVED: That the League, through its officers, shall cooperate with the Washington State Chapter of the American Institute of Architects in securing necessary legislation to accomplish the above purpose.

The League's action followed addresses made at the opening of the afternoon session by Carl Gould and B. Marcus Priteca, representing the Washington Chapter, A.I.A.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Owing to the various crafts accepting the NRA code of fair competition, in some cases they have adopted a schedule of prices, and it therefore would be advisable to get in touch with these firms direct.
Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $35 to $40 per 1000 laid, (according to class of work).
Face, $75 to $90 per 1000 laid, according to class of work).
Brick Steps, using pressed brick, $1.10 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.75 sq. ft.
Common, f. o. b. cars, $15.00 job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job carload lots).

8x12x5½	$ 94.50
6x12x5 ½	73.50

Discount 5%.

Composition Floors — 18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b.) Job. S.F.) $2.90 per bbl.
Cement (f.o.b. Job, Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Medusa "White" ..... $ 8.50 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place. exclusive of forms, 30c per cu. ft.
4-inch concrete basement floor..... 12½c to 14c per sq. ft.
4½ inch Concrete Basement floor ..... 14½c to 16c per sq. ft.
2-inch rat-proofing.... 6½c per sq. ft.
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Meduca Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—
Double strength window glass. 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 75c per square foot.
Art. $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.
Note—Add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$35.00 per M
No. 2 common	28.00 per M
Selected O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	48.00 per M
1x4 No. 3 flooring VG	42.00 per M
1x6 No. 2 flooring VG	48.00 per M
1¼x4 and 6, No. 2 flooring	52.00 per M

Slash grain—

1x4 No. 2 flooring	$39.00 per M
1x4 No. 3 flooring	34.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ 1.00 per bdle.
Redwood, No. 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.		
1 1-16x2¼" T & G Maple	132.00 M ft.		
⅞x3½ sq. edge Maple	140.00 M ft.		
	13-16x2¼" T&G	⅞x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—
O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel. 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.
Dining room cases, $7.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.
For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 29c per yard
Three-coat work .....40c per yard
Cold Water Painting .....10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. keg s,net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00	lineal foot
8-inch	1.50	lineal foot
10-inch	1.75	lineal foot
12-inch	2.00	lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish No. 18 gauge wire mesh	1.50
3 coats Medusa finish No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks, $13.85 (rebate 10c sack).
Dealer's commission, $1.00 off above quotations.
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale .....$1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat. with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware. $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

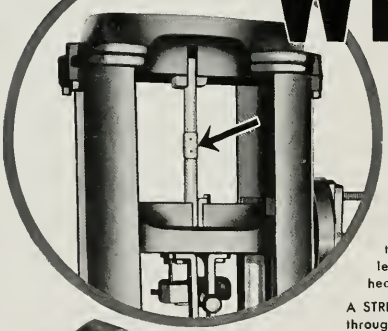
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

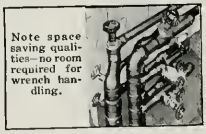
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile — Floor, Wainscot, Etc. — (See Dealers).

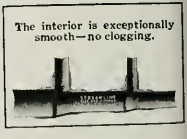
WHAT A JOINT!



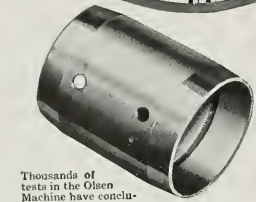
The hydraulic pressure pump test shows that it requires 4000 lbs. or over internal pressure to fracture Standard STREAMLINE Copper Pipe. The joint itself remains intact.



Note space saving qualities—no room required for wrench handling.



The interior is exceptionally smooth—no clogging.



Thousands of tests in the Olsen Machine have conclusively proved that you cannot fracture this patented joint. The pipe invariably breaks first. ¾" extra-heavy pipe will fail at approximately 9500 lbs., but the joint invariably remains intact.

STREAMLINE FITTINGS AND COPPER PIPE require neither threading nor flaring to make a perfectly bonded connection—they give the building owner an installation that is absolutely rust, leak and vibration proof—a permonent trouble-free plumbing or heating conducting system that will actuolly outlast the building itself.

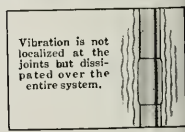
A STREAMLINE Fitting is connected to copper pipe by feading solder through a feed hole in the fitting where it is immediately distributed by capillarity between the bonding surfaces producing an enormously strong joint.

Pipe that requires threading must have extra wall thicknesses and since threading is eliminated in STREAMLINE materials, the strength of the pipe is not reduced at the connections. Thus, expensive surplus material that gives no additionol service for its increased cost is reduced to the requirements of actual service only. A STREAMLINE installation costs little, if any more, thon corrodible materials.

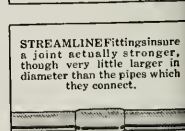
STREAMLINE Copper Pipe is furnished in standard, heavy ond extra-heovy in hord or soft temper. Standard STREAMLINE Copper Pipe (Type M) is used in approximately 80% of STREAMLINE installations.

Let us send you our A. I. A. File No. 29 84 illustrating a complete range of STREAMLINE Fittings and Copper Pipe—or information concerning thousands of STREAMLINE instollations and the names of architects who have specified, or engineers who have used STREAMLINE materials.

Hard STREAMLINE Copper Pipe has a handsome appearance—free from kinks or sags.



Vibration is not localized at the joints but dissipated over the entire system.



STREAMLINE Fittings insure a joint actually stronger, though very little larger in diameter than the pipes which they connect.

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SHORT LIFE OF THE SKYSCRAPER

The Empire State Building, the Chrysler Building, the Metropolitan Tower, and the Woolworth Building are likely to be torn down within fifty or seventy-five years because of obsolescence, according to William Orr Ludlow of the New York Chapter of the American Institute of Architects.

"Structurally they would probably last 1,000 years, but actually their end will come perhaps sooner than we think," says Mr. Ludlow, architect of the Arnold Constable Tower, Johns-Manville Building, the New York Times Annex, and other New York structures. "These magnificent buildings, with all their appeal of pride and glamour, will disappear just as soon as they become commercially unprofitable."

New inventions for convenience and comfort are among the factors which will make skyscrapers unprofitable within fifty or seventy-five years, Mr. Ludlow declares. Other forces, he explains, will be decentralization, or the spreading out of the population horizontally; the aeroplane; new business methods making quick personal contacts less necessary; new ideas regarding sunlight and air conditioning; new styles of architecture; new and cheaper methods and materials of construction; and constant and rapid change of the character of occupancy of neighborhoods.

"Almost any one of these causes may destroy the usefulness of our present skyscrapers," Mr. Ludlow continued. "Commercial buildings erected fifty years ago not only look antiquated, but, because they lack the conveniences of newer buildings and are in outmoded neighborhoods, are antiquated.

"The commercial buildings of seventy-five years ago have almost disappeared, and the few that remain are liabilities. Today new gadgets, new styles, new methods, new things for convenience and comfort are coming much faster than they did fifty or seventy-five years ago. Obsolescence will come even quicker than formerly.

"The aeroplane alone may make the present skyscraper out of date. Vertical landing may require flat top buildings with top entrances, landing platforms for each building, or great isolated tower terminals, making new city centers, and causing the abandonment of the old, just as the railroad terminals have done and are likely to do again.

"Tenants will do just exactly what they have always done. They will forsake old buildings for new, partly because the character of the neighborhood has changed, partly because they want the latest conveniences, and partly just because every one takes a new thing for an old if the price is the same.

"Every generation thinks that its things are

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the 'last word', but we may be quite sure that what we have today will be no more acceptable to our grandchildren than the things of our grandfathers are to us—including skyscrapers."

MODERN HOME EXPOSITION

A modern home Exposition in cooperation with the Federal Housing Administration, will be held one week, beginning Saturday, February 16th, at the Coliseum, Chicago. More than 250 manufacturers and dealers are expected to be represented with 350 exhibits of products allied with the building industry.

Experts in various phases of modernization and home furnishings are scheduled to speak at the sessions.

Luster to the festivities will be added by the participation of stage, screen and radio notables.

Among those on the executive committee are Rufus C. Dawes, Potter Palmer, Thomas E. Wilson, Leon Mandel, Milton S. Florsheim, Michael L. Igoe, Charles A. McCulloch, William H. Mitchell, Warren Wright, L. A. Downs, Robert F. Carr and Avery Brundage.

A prize of $100 has been offered by Vandorf Gray for the best poster for the exposition. The contest, which closes February 8, is open to professionals as well as amateurs.

Comprising the board of judges will be critics, art directors, and advertising experts. Posters should be forwarded to Vandorf Gray, Executive Director Modern Home Exposition, 1 North La Salle Street, Chicago, Ill.

GRADE SEPARATION THE SOLUTION

It has been contended frequently that street intersections contribute more to traffic congestion in a city than do the great number of automobiles.

The following report of Secretary of State Stadelman of Oregon also bears out that street intersections are responsible for many of the traffic accidents and fatalities:

> Salem, Oregon.— Fifty per cent of all motor vehicle accidents and 25 per cent of all traffic fatalities occur at street intersections.
>
> During September there was a total of 1825 traffic accidents reported, of which 914 occurred at street intersections. Of the 21 fatalities reported during the month, 5 occurred at street intersections. On the other hand, 11 of the 21 fatalities, or more than 50 per cent, occurred on straight highways.

In planning street layouts for future development, these facts should be considered. Where two heavy streams of traffic cross, grade separation is the practicable solution.

PROGRESS OF HOUSING PROGRAM

Progress of the Better Housing program of the Federal Housing Administration is reflected in the constantly increasing volume of additions, alterations and repairs throughout the country, according to reports made to the Bureau of Labor Statistics of the Department of Labor.

Figures recently made public covering building permits in 772 cities showed modernization work in November of $13,071,000 against $8,110,000 for the same month last year, a gain of 62%. This compares with a 50% gain in October, 27% in September and 18% in August over the same months last year.

All geographical divisions showed gains as follows: East South Central, 136%; South Atlantic, 101%; Mountain, 86%; West North Central, 80%; West South Central, 78%; East North Central, 71%; Pacific, 51%; Middle Atlantic, 45% and New England, 32%.

Many of the cities reporting installations, which also are included in the Federal Housing Administration's modernization program, showed a remarkable volume. Cincinnati led in this type of work with $216,645, considerably more than its volume of alterations and repairs. Milwaukee was second with $152,020, Washington third with $68,370, Philadelphia fourth with $47,430,

Des Moines fifth with $52,792 and Indianapolis sixth with $35,106.

Several surprises were shown in the first 25 cities of the country, rated according to their November volume of additions, alterations and repairs. Washington, D.C., was second to New York City, while Hempstead, N.Y., with a population of 12,650, stood tenth in the list. Most of Hempstead's volume was in industrial modernization.

The 25 cities of the country leading in modernization work in November were:

City	1934	1933
New York City	$1,730,280	$1,504,078
Washington, D. C.	627,192	127,840
Los Angeles, Cal.	566,605	263,235
Philadelphia, Pa.	324,144	180,418
Detroit, Mich.	304,639	117,081
Milwaukee, Wis.	285,580	52,209
Baltimore, Md.	281,800	323,200
Boston, Mass.	268,704	244,671
Dallas, Tex.	244,605	44,457
Hempstead, N. Y.	238,785	500
Binghamton, N. Y.	178,367	37,733
Chicago, Ill.	178,003	128,967
Atlanta, Ga.	175,615	33,909
San Francisco, Cal.	166,435	100,444
Hartford, Conn.	165,691	101,830
Cincinnati, Ohio	151,020	48,840
Cleveland, Ohio	150,925	58,325
Anniston, Ala.	147,210	2,660
Newark, N. J.	125,840	49,435
Miami, Fla.	125,099	71,644
Pittsburgh, Pa.	116,773	44,740
San Mateo, Cal.	114,114	1,025
Long Beach, Cal.	103,460	157,340
Jacksonville, Fla.	103,158	39,383
Minneapolis, Minn.	93,430	36,715

BUILDERS PLAN EXPOSITION

Sponsored by the San Francisco Builders Exchange, Mechanics Exposition is to be held in San Francisco this spring, according to an announcement by W. H. George, president of the Exchange.

The purposes of the exposition, which will be similar to those of the old Mechanics Fair, an annual event in San Francisco for many years up to the fire of 1906, is to afford the vast potential buying power of the trade area of the Pacific Coast the opportunity to visualize and inspect the manifold products used in building construction.

At the same time it is designed as an effort to assist in increasing interest in the Federal Housing campaign and will come at an opportune time with relation to the new housing program.

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VENICE SCHOOL BUILDING

The Los Angeles board of education has approved drawings and specifications by John C. Austin and Frederic M. Ashley, Chamber of Commerce Building, Los Angeles, for a two-story, class A concrete school administration building, junior building and senior building to be erected at the Venice high school site, 13,000 Venice Boulevard. The buildings will be 81x151 feet, 64x223 feet, and 64x249 feet in area; composition roofing, metal roof vents, steel and wood sash, gunite exteriors, concrete footings, reinforced concrete slab, flagstone, wood and linoleum floors, hardwood and Oregon pine trim, concrete slab corridors and stairways, metal lath, tile toilets, urinals, automatic storage water heaters, metal book shelves, lockers, slate blackboards, cork bulletin boards, sewing, kitchen and laboratory equipment, etc. The cost is estimated at $378,000.

BRANCH LIBRARY

Noble and Archie T. Newsom, Russ Building, San Francisco, have been commissioned to prepare plans for a one-story frame branch library building for the City of Oakland. The location is Park Boulevard and Wellington Avenue.

The new Decatur De Luxe Lavatory, illustrated here, is representative of the MUELLER line of quality vitreous china. . .

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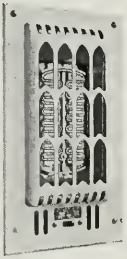

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STORE BUILDINGS AND SHOPPING CENTERS

From *The Architectural Record*

The neighborhood community is the basic unit of city building. The economic success of a neighborhood community and the well-being of its inhabitants depend to a great extent on the planning of the neighborhood shopping center. Such a center supplies the daily and staple needs of the homes within a limited radius. It differs from the regional or metropolitan market in that it depends on purely local trade. It gets little if any patronage from outside. If it is to be successful, it must be convenient in location and attractive in arrangement. Its prices must be reasonable and, above all, it must be profitable—profitable to the storekeeper, to the landlord, to the neighborhood community, and in taxes, it must be profitable to the city.

All the details in the problem of planning shopping centers for a new community resolve themselves into four general categories: quantity, location, form, and control. How many and what kinds of stores will be required? What form shall they take, where should they be located? And how can long-time success be guaranteed, in planning and in operation? . . . .

To plan a successful neighborhood shopping center, we must first know what to plan for, how many stores and what kind. Numerous painstaking surveys of existing conditions have been made for the purpose of setting up a basis for future planning. These have attempted to find the number and kinds of stores that would be needed by counting the number of existing stores or measuring the number of front feet occupied by existing stores and comparing that with the neighborhood population. All these studies serve but one purpose: they show us what not to do, for any one who looks around his own neighborhood knows that there are too many stores. And so we can only use most of these analyses of existing conditions as a warning. . . . .

All of which goes to prove that in determining the size of shopping centers logic, not precedent, must be our guide. A healthy shopping center must fulfill five different requirements:

1. It must satisfy the *consumer,* by giving him a reasonable selection of goods at a fair price in a convenient location.

2. It must satisfy the *landlord,* by providing adequate rentals, a minimum of vacancies and reasonably low turnover in tenants. In short, a maximum return on a minimum investment.

3. It must satisfy the *storekeeper.* by providing an adequate return for intelligent operation. and reasonable assurance of permanent demand.

4. It must satisfy the community as a whole (whether the property is in single or multiple ownership), by being attractive and harmonious when built, and by presenting no danger of blight or decay, which might eventually affect the entire neighborhood.

5. It must satisfy the *city* or other governmental body, by paying adequate and regular taxes.

There is hardly a shopping center in the country which fulfills these conditions, even in times of prosperity. And the principal reason was then as it is now: there were too many stores, too many from the point of view of all interests. . . . .

There is nothing in our present methods of laissez faire that will help us out of this mad condition of a surfeit of stores that harms all interests. All methods of estimating store requirements for new neighborhoods, which are based on quantitative uncritical surveys of existing conditions, are worthless for this purpose. . . . .

The scientific as well as the common sense method of planning retail facilities must begin with an analysis of the number and kind of stores that will be required in a given community. . . . .

HOTEL INSTALLS GAS HEAT

Under the management of the Allied Properties, outstanding operating improvements have been made at the Alexander Hamilton Hotel and Apartments, 641 O'Farrell Street, San Francisco. Among these improvements has been the conversion of the heating plant from oil to natural gas firing, resulting in greatly increased efficiency, reduced fuel costs and less maintenance.

The heating plant in this building consists of two steel boilers, operating at 5 lbs. steam pressure, and the conversion was made by the installatoin of upshot gas burners. Automatic damper control, to proportion the air and gas for maximum efficiency in combustion, has also been provided.

Chief Engineer George W. Johnson, in charge of the heating equipment which supplies heat to the 256 rooms through a vacuum system, is enthusiastic concerning the advantages of natural gas fuel for heating. In general, it greatly simplifies plant operation because of the possibility of complete automatic control and steady fuel supply. And in addition to the substantial saving in actual fuel cost as a result of the conversion, operation of the entire equipment is much cleaner than with liquid fuel.

ADDITION TO FRATERNITY HOUSE

Charles Sumner, of Palo Alto, is preparing plans for alterations and additions to Delta Chi Fraternity on the University Campus, at Stanford. Improvements will cost about $15,000.

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CABLE SPINNING PLANT

The John Roebling Sons Company will start construction this month of a one-story steel cable spinning plant, 535x100′ at California City, Marin County. This company is to furnish all of the steel cables for the new Golden Gate Bridge.

HILLSBOROUGH RESIDENCE

Williams & Wastell, 374-17th Street, Oakland, have awarded a contract for a two-story Colonial residence in Hillsborough for W. P. Byrns, 15 Park Road, Burlingame.

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CONTRACTORS CLASSIFIED

A total of 20,195 contractors were licensed to do business in California on November 14, 1934, as compared with 22,430 registered on June 30, 1934, it is shown by the alphabetical register and supplement issued by the Registrar of Contractors, Colonel Carlos W. Huntington. This book a copy of which may be obtained from the registrar of contractors at actual cost to the state, contains more than 200 pages, lists and classifies, with addresses, every contractor registered up to November 15, 1934.

The Contractors' License Bureau is often called upon to answer the question, What is a contractor? Answering that question, Glen V. Slater, assistant registrar of contractors, cites the legal definition in the State Contractors' License law, stating the bureau finds itself dealing constantly with the complex problems of more than 60 different types and classifications of contractors. "These classifications," he says, range from the specialty type of contractor, of which there might be only one registered in California, up to the general building contractor, which is the largest group within the construction industry, with registration of 6191 persons on June 30, last, and 5677 on November 15, 1934. While the problems affecting these different groups are many and varied, they are fundamentally the same, in so far as those issues and problems coming within the scope than a dozen, or perhaps only one registered."

"Each group and classification receives the same attention, whether there are thousands registered in a particular vocation, or less than a dozen, or perhaps only one.

Following is the tabluation:

	June 30 1934	Nov. 15 1934
(General Engineering) .	1,290	1,202
(General Building) . .	6,191	5,677
Acoustical	20	16
Asbestos and Insulation	15	15

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Boilers, steam fitting	70	76
Building Specialties	175	173
Cabinet Work	147	125
Carpentry	393	275
Cement and Concrete	777	700
Display and Decoration	16	11
Electrical	1,570	1,489
Elevators	34	33
Excavating and Grading	94	82
Fencing	37	37
Fixtures & Furnishings	295	262
Floor	444	420
Foundations	9	5
Furnaces & Burners	15	13
Glazing	98	93
Granite and Stone	52	41
Hauling and Trucking	70	52
Heating & Ventilating	237	201
House Moving	80	91
Institutional Equipt.	8	7
Iron & Bronze—Orn	173	154
Labor	23	9
Land Leveling	4	4
Lathing	224	185
Landscaping	111	96
Marble, Ter. & Mosaic	53	77
Masonry—Brick, etc.	435	409
Machinery	51	49
Mill work	54	51
Ornamental Plaster	40	38
Painting & Decorating	3,022	2,716
Pest Control—Struct.	57	45
Plastering	1,160	1,039
Plumbing	2,034	1,795
Pumps	74	76
Refrigeration	132	148
Roofing	518	473
Sand Blasting	5	1
Scaffolding	6	5
Screens	27	28
Sewers and Drains	24	13
Sheet Metal	438	414
Sidewalks & Runways	10	10
Signs	115	85
Sprinklers	32	30
Automatic fire prevention	1	1
Lawns	2	2
Stage Erector	3	3
Stair Builders	9	6
Steel—Erector	8	16
Steel—Reinforcing	48	45
Steel—Structural	23	21
Steel—Other Lines	35	38
Tanks	18	19
Tile and Tiling	409	361
Vaults and Safes	8	9
Waterproofing, Dampproofing	28	23
Water Well Drilling	67	58
Weatherstripping	26	20
Wrecking	51	39
Welding	18	13
Speculative Builders	359	281
Unclassified and Miscellaneous	90	110
Totals	22,430	20,195

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ART CLUB

The Business Men's Art Club of San Francisco, now being organized, is to be operated on the same general plan as the Business Men's Art Clubs of Chicago, New York, Cleveland, Boston, Milwaukee, Philadelphia, Denver and Los Angeles.

The first of these clubs, organized in Chicago in 1920, now has a membership of over two hundred. The New York Club was organized in 1929 by Henry Dumont, organizer of the San Francisco Club, and has over one hundred members, while those of the other cities named are all flourishing.

The club is a non-profit organization, designed to promote self culture among its members. It is non-professional and no one is admitted who gains his livelihood by painting. A member may come from any walk of life — his one qualification must be an impulse to draw, paint, or model, be he baker or bank president, architect or attorney, chemist or cashier.

PATENTS

A form of concrete pipe construction has been invented by Bozidar J. Ukropina of Los Angeles.

The pipe includes a reinforcing cage embedded therein, said reinforcing cage including a band at each end of said pipe with the outer surface thereof exposed, a plurality of spaced rings secured to the inner surface of each of said bands, a plurality of circumferentially spaced longitudinally extending bars secured to said rings, a plurality of spaced tongues on said bars, said tongues being stamped from said bars and being inclined at an angle to said bars, resilient packing rings engaging the inner surfaces of said end bands and the inner surfaces of said rings.

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Clinton Construction Co.
of California
923 Folsom Street
San Francisco
SUtter 3440

A patent for making colored cement has been issued to John Finn, Jr., of Berkeley.

The process consists of heating Portland cement or clinker with from one-tenth per cent to five per cent of sulphur to a temperature from 800° F. to 1800° F. for a period of time and with substantial exclusion of air to materially change the color of cement or clinker, and then adding an additional quantity of sulphur to further modify the color produced.

LOCAL CITIES LEAD

San Francisco and Oakland led all other cities in the amount pledged for modernization and repairs to property, according to figures contained in a report of the Federal Housing Administration which showed over $200,000,000 either spent or pledged for this type of work since August 1.

The $200,000,000 estimates include reports as of December 31 from 3,997 financial institutions which have made 72,658 loans totaling $30,450,583. Altogether, 11,936 financial institutions have qualified to make modernization loans, while 779 institutions with 1,254 branch offices have qualified to make mortgage loans since the new construction program was started on November 1.

These data are supplemented by reports from 3,798 active community organizations, showing that property owners everywhere have largely been financing the repairs and improvements themselves, rather than borrowing funds from lending institutions. The total value of modernization work generated by these organizations is estimated at $205,682,302.

This figure is supported by reports from cities in all sections of the county concerning the volume of modernization work pledged to date. San Francisco pledged $12,000,000 and Oakland $10,000,000.

WORK FOR ARCHITECTS (?)

Out of more than 8,000 pledges to make alterations to buildings under the Federal Housing Act in Oakland, only **three** property owners asked for architectural advice. . . . . Other cities, no doubt, have had similar experience.

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850 East Fifty-Eighth Street, Chicago, Illinois

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Vice-President: **Alfred K. Stern,** Chairman, Illinois State Housing Board, Chicago

Executive Committee: **Miles L. Colean,** Director, Technical Department, Federal Housing Administration; **Bertram E. Giesecke,** Board of Directors, Texas Rural Communities; **George Gove,** Secretary, State Board of Housing, New York; **Horatio B. Hackett,** Director of Housing, Federal Emergency Administration of Public Works; **Langdon Post,** Chairman, New York City Housing Authority; the President and Vice-President Ex-Officiis.

Executive Director: **Coleman Woodbury**

Assistant Director: **Elizabeth Longan**

The National Association of Housing Officials was organized to help local, state and national housing officials in developing adequate programs for low-cost housing, both rural and urban, in the United States.

During recent months housing legislation and the number of housing officials in this country have grown very rapidly. Not counting employees of the federal government, over 200 housing officials have taken office and other hundreds of responsible citizens have become interested for the first time in rebuilding the poorer residential sections of their cities.

This rapid establishment of housing agencies is encouraging, but unfortunately the body of information and experience in this country on which the newly appointed officials can draw is very small and is limited mainly to the largest cities. The major immediate purpose of the N. A. H. O. is to offset as far as possible this lack of experience by facilitating the exchange of ideas and information among housing officials and other interested persons, by advising on local studies and surveys so that they will produce the most usable results, by bringing about a clearer understanding of problems and methods among local, state and national officials, and by drawing upon European experience to the extent that it is applicable to American conditions and problems.

The Association has two classes of membership—active and associate. Active members are housing officials; associate members are persons interested in housing who do not hold official housing positions. Both classes of members pay the same dues and receive all of the services of the Association.

Classified Advertising Announcements

All Firms are Listed by Pages, besides being grouped according to Craft or Trade. Number of listings depends upon amount of advertising space carried. Star (*) indicates alternate months.

ARCHITECTURAL MODELING — Page

S. Berger, 390 Ninth Street, San Francisco — 71

ARCHITECTURAL TERRA COTTA

N. Clark & Sons, 116 Natoma Street, San Francisco — 7
Gladding, McBean & Co. — 8
Gladding McBean & Co., 660 Market Street, San Francisco; 2901 Los Feliz Boulevard Los Angeles; 1500 First Avenue South, Seattle; 79 S. E. Taylor St., Portland; 22nd and Market Streets, Oakland; 1102 N. Monroe Street, Spokane; Vancouver, B. C. — 8

BRICK—FACE, COMMON, ETC.

N. Clark & Sons, 116 Natoma Street, San Francisco — 7
Gladding McBean & Co., 660 Market Street, San Francisco; 2901 Los Feliz Boulevard Los Angeles; 1500 First Avenue South, Seattle; 79 S. E. Taylor St., Portland; 22nd and Market Streets, Oakland; 1102 N. Monroe Street, Spokane; Vancouver, B. C. — 8
W. S. Dickey Clay Mfg. Co., Crossley Building, San Francisco and Oakland — 72

BUILDERS HARDWARE

"Corbin" hardware, sold by Palace Hardware Company, 581 Market Street, San Francisco — 72
The Stanley Works, New Britain, Conn.; Mondanock Bldg., San Francisco; Los Angeles and Seattle — *

BUILDING PAPERS

The Sisalkraft Company, 205 W. Walker Drive, Chicago, Ill., and 55 New Montgomery Street, San Francisco — 74
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle — 1
"Brownskin," distributed by Forderer Cornice Works, 269 Potrero Avenue, San Francisco — 72

CEMENT

Portland Cement Association, 564 Market Street, San Francisco; 816 West Fifth Street, Los Angeles; 146 West Fifth Street, Portland; 518 Exchange Building, Seattle — Back cover
"Golden Gate" and "Old Mission," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego — Third cover

CEMENT TESTS—CHEMICAL ENGINEERS

Robert W. Hunt Co., 251 Kearny Street, San Francisco — 74

CEMENT—COLOR

"Golden Gate Tan Cement," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego — Third cover

CONCRETE PRODUCTS

Crown Cement Products, Ltd., 1717 Seventeenth Street, San Francisco — 6

CONCRETE AGGREGATES

Golden Gate Atlas Materials Company, Sixteenth and Harrison Streets, San Francisco — 73
John Cassaretto, Sixth and Channel Streets, San Francisco — 75

CONCRETE CURING & PROTECTION

The Sisalkraft Company, 205 W. Wacker Drive, Chicago, Ill., and 55 New Montgomery Street, San Francisco — 74

CONTRACTORS—GENERAL

MacDonald & Kahn, Financial Center Bldg., San Francisco — 74
Lindgren & Swinerton, Inc., Standard Oil Building, San Francisco — 64
Dinwiddie Construction Co., Crocker Bldg., San Francisco — 75
Clinton Construction Company, 923 Folsom Street, San Francisco — 75
Anderson & Ringrose, 320 Market Street, San Francisco — 72
G. P. W. Jensen, 320 Market Street, San Francisco — 74
Monson Bros., 475 Sixth Street, San Francisco — 78
P. F. Reilly, 730 Ellis Street, San Francisco — 72

NEW THIS MONTH

United States Lime Products Corp. — 2

White Pine Sash Co. — 61

Pacific Elevator and Equipment Co. — 78

Kingsland Granite Co. — 78

Pacific Tile and Mantel Co. — 78

E. K. Wood Lumber Co. — 6

COPPER PIPE—STREAMLINE

Page

Mueller Brass Co., Norman S. Wright & Co., distributors; 41 Spear Street, San Francisco; 608 Pioneer Bldg., Seattle; 923 East Third Street, Los Angeles... 66

DAMP-PROOFING & WATERPROOFING

"Golden Gate Tan Plastic Waterproof Cement," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego ... Third cover

The Sisalkraft Company, 205 W. Wacker Drive, Chicago, Ill., and 55 New Montgomery Street, San Francisco... 74

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle ... 1

DOORS—HOLLOW METAL

Forderer Cornice Works, Potrero Avenue, San Francisco... 72

Kawneer Mfg. Co., Eighth and Dwight Streets, Berkeley... 71

DRAIN PIPE AND FITTINGS

"Corrosion" Acid Proof, manufactured by Pacific Foundry Co., 3100 Nineteenth Street, San Francisco, and 470 E. Third Street, Los Angeles... 64

DRINKING FOUNTAINS

Haws Sanitary Drinking Faucet Co., 1808 Harmon Street, Berkeley; American Seating Co., San Francisco, Los Angeles and Phoenix... 6

ENGINEERS—MECHANICAL

Hunter & Hudson, 41 Sutter Street, San Francisco... 72

ELECTRIC AIR AND WATER HEATERS

Sandoval Sales Company, 557 Market Street, San Francisco... 70

ELECTRICAL ADVICE

Pacific Coast Electrical Bureau, 447 Sutter Street, San Francisco, and 601 W. Fifth Street, Los Angeles... 67

ELECTRIC REFRIGERATION FITTINGS

Mueller Brass Co., Norman S. Wright & Co., distributors; 41 Spear Street, San Francisco; 608 Pioneer Bldg., Seattle; 923 East Third Street, Los Angeles... 66

ELEVATORS

Pacific Elevator and Equipment Company, 45 Rausch Street, San Francisco... 78

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Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City... 4

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California Rustic Fence Company, Call Building, San Francisco. Plant at Healdsburg *

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FIXTURES—BANK, OFFICE, STORE

Mullen Manufacturing Co., 64 Rausch Street, San Francisco... 75

Pacific Manufacturing Company, 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland, Los Angeles and Santa Clara... 73

GAS FUEL

Pacific Coast Gas Association, Inc., 447 Sutter Street, San Francisco. Second cover

GAS BURNERS

Vaughn-G. E. Witt Company, 4224-28 Hollis Street, Emeryville, Oakland... 74

GLASS

W. P. Fuller & Co., 301 Mission Street, San Francisco. Branches and dealers throughout the West... *

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GRANITE

Kingsland Granite Company, Fresno, California. 78

HARDWARE

Palace Hardware Company, 581 Market Street, San Francisco. 72

HEATING—ELECTRIC

Apex Air and Water Electric Heaters, Sandoval Sales Company, 557 Market Street, San Francisco... 70

HEAT REGULATION

Johnson Service Company, Milwaukee, represented on the Pacific Coast by the following branch offices: 814 Rialto Bldg., San Francisco; 153 West Avenue, 34, Los Angeles; 1312 N. W. Raleigh St., Portland, and 473 Colman Bldg., Seattle... 3

HOLLOW BUILDING TILE (Burned Clay)

N. Clark & Sons, 112-116 Natoma Street; works, West Alameda, Calif... 7

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The Architects Directory of California

Having been inactive for the past two years, this publication will be again available in a revised edition —Vol. 7, No. 6.

The Architectural profession will welcome this semi-annual directory which has done signal service for the California architect since 1927.

Address all inquiries to:
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Page

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland 72

INSPECTION AND TESTS

Robert W. Hunt Co., 251 Kearny St., San Francisco. 74

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LINOLEUM

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Sloan-Blabon linoleum, sold by California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70

LUMBER

Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara 73
Smith Lumber Company, Nineteenth Avenue and Estuary, Oakland 73
Chas. R. McCormick Lumber Company, Portland; Sheldon Bldg., San Francisco; Los Angeles 69
Melrose Lumber & Supply Co., Forty-sixth Avenue and E. Twelfth Street, Oakland 72
E. K. Wood Lumber Company, 4701 Santa Fe Avenue, Los Angeles; 1 Drumm Street, San Francisco; Frederick and King Streets, Oakland 6

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Joseph Musto Sons-Keenan Co., 535 N. Point Street, San Francisco 72

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Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara 73
Smith Lumber Company, Nineteenth Avenue and Estuary, Oakland 73

MONEL METAL

"Inco" brand, distributed on the Pacific Coast by the Pacific Foundry Company, Harrison and Eighteenth Streets, San Francisco, and Eagle Brass Foundry, Seattle 64

OIL BURNERS

S. T. Johnson Co., 585 Potrero Avenue, San Francisco; 940 Arlington Street, Oakland; 1729 Front Street, Sacramento, and 230 N. Sutter Street, Stockton 68
Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland 74

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PARTITIONS—MOVABLE OFFICE

Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; factory at Santa Clara 73

PENCILS

Koh-I-Noor Pencil Co., Inc., 373 Fourth Avenue, New York City. *

PIPE-DUROLINE (cement lined)

National Duroline Pipe, manufactured by the National Tube Company, Frick Bldg., Pittsburgh, Pa. Pacific Coast Distributors: Columbia Steel Co., Russ Bldg., San Francisco *
Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City. 4

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PLASTER

"Empire" and "Reno Hardware Plaster," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego ..... Third cover

Page

Boulder Canyon dolomitic hydrated lime, manufactured by United States Lime Products Corp., 85 Second Street, San Francisco, 1840 E. Twenty-fifth Street, Los Angeles 2

PLATE GLASS

Libbey-Owens-Ford Glass Co., Toledo, Ohio; 633 Rialto Bldg., San Francisco; 1212 Architects Bldg., Los Angeles; Mr. C. W. Holland, P. O. Box 3142, Seattle *

PLUMBING FIXTURES

Mueller Co., Decatur, Ill.; San Francisco Branch, 1072 Howard Street 70

PLUMBING CONTRACTORS

Carl T. Doell Co., 467 Twenty-first Street, Oakland 73
Crane Co., all principal Coast cities. 74

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N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda 7

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California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70

SHEET METAL WORK

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Guilfoy Cornice Works, 1234 Howard Street, San Francisco. 73

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STEEL—STAINLESS

Republic Steel Corporation, Rialto Bldg., San Francisco; Edison Bldg., Los Angeles; Smith Tower, Seattle. 73

STEEL SHEETS

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4

STEEL, STRUCTURAL

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4
Judson Pacific Company, C. F. Weber Bldg., Mission and Second Streets, San Francisco, shops, San Francisco and Oakland 70
Pacific Coast Steel Corporation, Twentieth and Illinois Streets, San Francisco; Slawson Avenue, Los Angeles; American Bank Bldg., Portland; West Andover Street, Seattle 78

STORE FRONTS

Kawneer Mfg. Co., Eighth and Dwight Streets, Berkeley 71

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Reilly Tar & Chemical Corp., Indianapolis, Indiana; Architects' Bldg., Los Angeles; 461 Market Street, San Francisco. 6
E. K. Wood Lumber Company, No. 1 Drumm Street, San Francisco; 4701 Santa Fe Ave., Los Angeles; Frederick and King Streets, Oakland. 6
J. H. Baxter & Co., 333 Montgomery Street, San Francisco, and 601 W. Fifth Street, Los Angeles 71

WINDOWS

Dalmo-Pinecraft-Automatic swing-type windows, White Pine Sash Company, Spokane. 61
Kawneer Mfg. Co., West Berkeley 71

WINDOW SHADES

California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco. 70
Wm. Volker & Co., 631 Howard Street, San Francisco. 73

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in San Francisco and Oakland for remodeling. . . . Some of this work has already been done but the greater part of it is in prospect.

* * *

Photographs, before and after, tell a graphic story. The March issue of **The Architect and Engineer** will give you an inkling of the splendid results already achieved by some of our leading architects. Old style, gloomy and unsanitary houses have been transformed, as if by magic, into modern, sunny, healthful dwellings.

* * *

In this same number Charles F. Maury, A.I.A., offers a new thought that will interest the prospective small home owner. Mr. Maury's plan should help to start the Federal Housing Act (No. II) on its way.

* * *

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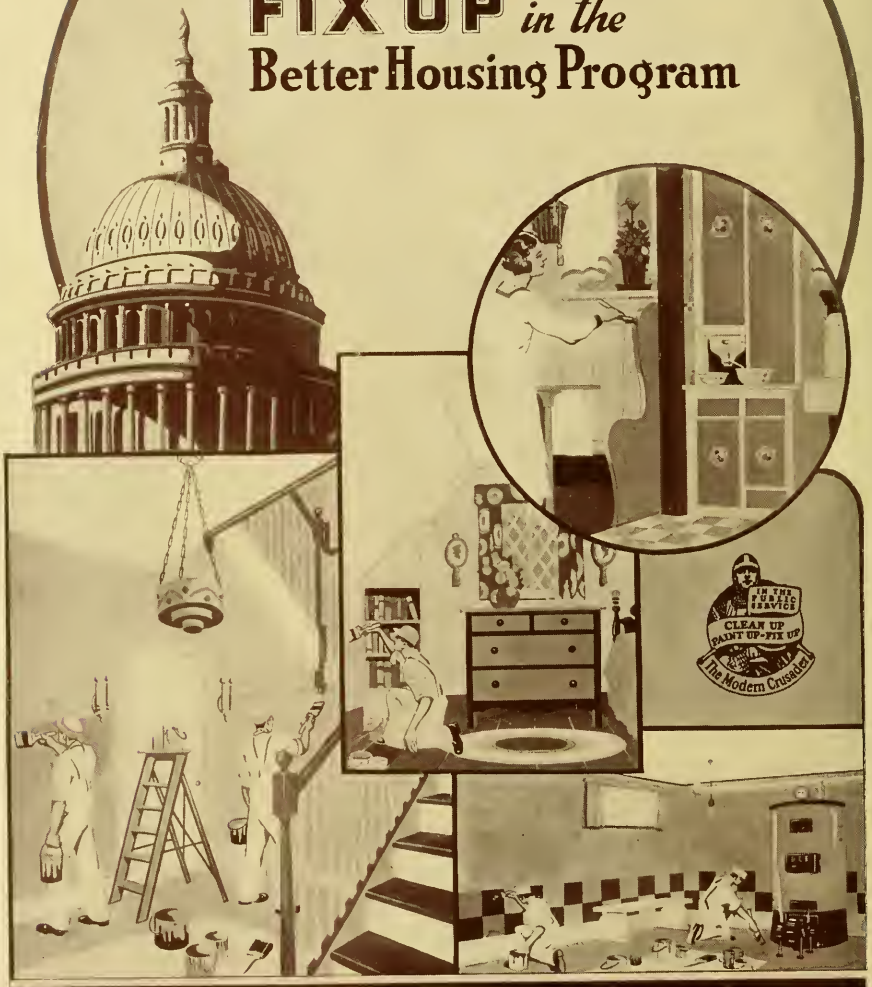

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Notes and Comments

THE public is becoming interested in architectural service. It is beginning to realize that good design must come from trained men; that a well planned home is more livable and has greater re-sale value than a home planned by a draftsman or builder.

The redwood industry has been aiding in the movement to better inform the public of architectural service, as demonstrated in the "Redwood Reveries" over KGO every Tuesday night. Listened to and enjoyed by thousands of people the three minute talks by prominent local architects have made an undeniable impression upon the public that must eventually benefit the profession.

The following is Mr. Charles F. Masten's three minute radio talk given over KGO:

"A home, as a rule is the largest single purchase many families ever make, and as such should not be made at all unless it possesses enduring qualities: First, it should be a place in which you may take great pride, a place which your children love and will always remember. It should be in good taste. That is, the style pleasing, the materials good and the location should be selected with an eye to the future possible hazards of the/a location) depreciating neighborhood.

"If you intend to build a home and wish to see for yourselves the difference between the pleasing and the unpleasant aspect of houses, take your automobile some day and drive where the best looking houses can be found. You may find a delightful French Cottage with slate roof and whitewashed brick walls with beautiful leaded glass windows; perhaps you may find a quaint Colonial home with its green shutters, double cross doors and picket fence. Again you may find that which you enjoy in an early California style house with hand split shake roof and its long graceful balcony where colored flower pots lend just the right charm.

"High cost is not an essential factor of these lovely places. A good looking home need cost no more than one that is poorly designed. The putting together of the right materials in an artistic composition is more economical than the same materials used without thought or study.

"The qualities of permanence, beauty and style in a building can best be obtained by the employment of a good architect, a good contractor and good craftsman using good materials."

* * *

MR. MAGONIGLE, whose criticism of the profession, printed in this magazine in December from *Pencil Points*, writes he has been beseiged with letters favorable and unfavorable to his frankly expressed opinions. Mr. Magonigle thinks it is time to "clean house" and he can see no improvement in the affairs of the Institute and its allied Chapters, until the "sweeping out" process has gotten under way. That the profession needs rehabilitation is admitted by the majority, but just how it is to be accomplished is problematical.

Mr. Magonigle thinks he has the solution. Replace business men with *real* architects in the management of the Institute and its Chapters, he says. Let us quote him verbatim in this respect:

"I have been a member of the Institute since 1905, a Fellow since 1907, a member of the Board of Directors, Treasurer and President of my Chapter, member and chairman of more committees than I care to count, and I know well how things go. I know that the artist type, the professionally minded type, is usually so engrossed in the creative side of his profession and his art that he takes a very languid interest in meetings that, frankly, are so often a deadly bore, and in the general issues of the societies he belongs to. The result is that the 'business' type has gotten to be the one you see at meetings, that does most of the talking, that gets elected to office, that represents the Chapter at Conventions. And if this be not true always or everywhere it is merely the exception that proves the rule. Little by little in these thirty years I have seen the quality of the attendance at meetings and conventions change, and from my point of view—and that of many others who remember Carrere, Peabody, Andrews, Stone, Day, Cram, and many others taking an active part in the conventions and often participating in the same debate—change for the worse. The subjects discussed, the point of view from which they were discussed, were on a plane distinctly higher than 'advertising the profession,' 'selling architecture,' and some of the other favorite topics of today. For little by little the business person has imposed his views upon the others not only by talk but by votes. Well, he has had his innings long enough, with the tiresome, pernicious, even sinister, ballyhoo that has given the outside public utterly fallacious ideas of what architectural service really is."

One of Mr. Magonigle's correspondents chides him for his personal attack upon the present administration of the Institute. To this accusation he replies:

"I am not. I am attacking a general trend, drift, condition—call it what you like. A long time ago, at least ten years I should think, I was in the office of a firm of architects in another city, all three of its members closely identified with Institute affairs, and in the course of our talk I made the statement that most of the trouble in the Institute lay in the type of mind we elected to leadership. One of them said 'Nonsense!' I said 'Get your Annuary.' He got it. 'Turn to the list of Officers and Directors.' He did so. 'Read it aloud from the beginning.' He began. 'Would you call *him* what you and I understand as an architect?' No, he wouldn't. 'Go ahead.' Same question, the answer sometimes Yes, sometimes No. By the time he was half way through he said 'Oh Hell!' and threw the book aside. It should be clear from this that I am not now making a personal attack upon this administration. I am attacking a pernicious condition that has existed for a long time and of which I have been aware for a long time. I maintain that most of our troubles proceed from the lowering of our professional standards and the adoption of business standards."

* * *

OVER in New Zealand they seem to be having difficulty in translating some of our common expressions connected with the building industry. A writer in "Building," referring to the recent renovations to the J. W. Robinson Building in Los Angeles, says that "in America they call it a job of 'face lifting'."

The same writer quotes what he terms another "descriptive expression"—the use of the word "re-vamping" for alteration work. It appears problematical, concludes the writer, whether American architects of the future should be required to add the word "osteopath" to their name plates.

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The Architect & ENGINEER

Vol. 120 February, 1935 No. 2

CONTENTS

COVER PICTURE, HOUSE OF EDWIN HEIZMAN, PALOS VERDES ESTATES
H. Roy Kelley, Architect

THE CAMPANILE, UNIVERSITY OF CALIFORNIA, BERKELEY 10
Sketch by Edward Gehrke

TEXT

MODERNIZE 11
Chas. F. Maury, A.I.A.

SCHOOLS 17
Frederick W. Jones

HOME LOANS 23
Albert J. Evers, A.I.A.

NO-WINDOWS 35
JOB WANTED 39
Elmer Grey, F.A.I.A.

"JERRY" BUILDERS 43
A. A. Brown, Consulting Engineer

ACOUSTICS 49
Michael Rettinger

PURE AIR 51
O. W. Ott, Consulting Engineer

ANCHORAGE 55
SOUTH TOWER 56
WITH THE ARCHITECTS 57
CHAPTER AND CLUB MEETINGS 62

PLATES AND ILLUSTRATIONS

HOUSE AT 69th AVENUE, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS . 12
Albert Farr, Architect

HOUSE ON SCOTT, NEAR GREENWICH STREET, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS 13
Warren Perry, Architect

HOUSE AT 611 JONES STREET, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS 14
Masten and Hurd, Architects

HOUSE AT 2618 BUCHANAN STREET, BEFORE AND AFTER ALTERATIONS . . 15
Henry H. Gutterson, Architect

HOUSE AT 3007 JACKSON STREET, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS 16
Rising and McGuinness, Architects

JEFFERSON HIGH SCHOOL, LOS ANGELES 17
Morgan, Walls and Clements, Architects

EXPERIMENTAL SCHOOL, LOS ANGELES 18
Richard J. Neutra, Architect

VENICE HIGH SCHOOL, LOS ANGELES 18
John C. Austin and Frederic M. Ashley, Architects

ROOSEVELT SCHOOL, SANTA MONICA 20
Marsh, Smith and Powell, Architects

SAN PEDRO HIGH SCHOOL, LOS ANGELES 21
Office of Gordon Kaufmann, Architects

PORTFOLIO OF SKETCHES BY EDWARD GEHRKE 25-33
DEPARTMENT STORE BUILDING FOR SEARS, ROEBUCK COMPANY . . . 35
Nimmons, Carr and Wright, Architects

TERMITE PICTURES 44-47

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CONTENTS

COVER PICTURE. HOUSE OF EDWIN HEIZMAN, PALOS VERDES ESTATES
H. Roy Kelley, Architect
THE CAMPANILE, UNIVERSITY OF CALIFORNIA, BERKELEY 10
Sketch by Edward Gehrke

TEXT

MODERNIZE 11
Chas. F. Maury A.I.A.
SCHOOLS 17
Frederick W. Jones
HOME LOANS 23
Albert J. Evers, A.I.A.
NO-WINDOWS 35
JOB WANTED 39
Elmer Grey F.A.I.A.
"JERRY" BUILDERS 43
A. A. Brown Consulting Engineer
ACOUSTICS 49
Michael Rettinger
PURE AIR 51
O. W. Ott Consulting Engineer
ANCHORAGE 55
SOUTH TOWER 56
WITH THE ARCHITECTS 57
CHAPTER AND CLUB MEETINGS 62

PLATES AND ILLUSTRATIONS

HOUSE AT 69th AVENUE, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS . 12
Albert Farr, Architect
HOUSE ON SCOTT, NEAR GREENWICH STREET, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS 13
Warren Perry, Architect
HOUSE AT 611 JONES STREET, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS 14
Masten and Hurd, Architects
HOUSE AT 2618 BUCHANAN STREET, BEFORE AND AFTER ALTERATIONS . . 15
Henry H. Gutterson, Architect
HOUSE AT 3007 JACKSON STREET, SAN FRANCISCO, BEFORE AND AFTER ALTERATIONS 16
Rising and McGuinness, Architects
JEFFERSON HIGH SCHOOL, LOS ANGELES 17
Morgan, Walls and Clements, Architects
EXPERIMENTAL SCHOOL, LOS ANGELES 18
Richard J. Neutra, Architect
VENICE HIGH SCHOOL, LOS ANGELES 19
John C. Austin and Frederic M. Ashley Architects
ROOSEVELT SCHOOL, SANTA MONICA 20
Marsh, Smith and Powell Architects
SAN PEDRO HIGH SCHOOL, LOS ANGELES 21
Office of Gordon Kaufmann, Architects
PORTFOLIO OF SKETCHES BY EDWARD GEHRKE 25-33
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CHAPTER AND CLUB MEETINGS 62

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The Architect & ENGINEER
February, 1935

Modernize

by Chas. F. Maury, A.I.A.

● *Many San Francisco Homes Sad Relics of the "Jig-saw" Age*

SAN FRANCISCO, like many other cities, is suffering from its dissipation of the late nineties, now termed the "Jig Saw Age". One has only to go through the Mission or Western Addition Districts to find hundreds of blocks of these obsolete houses and flats, most of them on twenty-five foot lots, some even with two sets of flats on a single lot and all crowded together. Very little has been done to these buildings since their unfortunate conception, except, possibly an occasional patch to a roof or an outside coat of paint, maybe once in every five years. Yet these districts, due to their location, climate, and transportation facilities, are the choicest housing locations of the city.

Since this "Jig Saw Age" there has been a gradual but tremendous change in our American standard of living. The automobile has taken its place in nearly every household. The size of the family has diminished. New principles of sanitation have developed. Transportation has been speeded up, making commutation possible. The movie, the delicatessen around the corner, the great development in the numerous electrical conveniences, and many other things, have changed living conditions and housing requirements, so that only those who cannot afford something better remain in these obsolete places.

San Francisco is gradually developing into a city of apartments; one has only to look at our fast changing skyline to realize this. With the development of faster transportation down the peninsula and the completion of the bridges, the house will soon disappear and the apartment take its place in the central areas. In this central area, our problem to meet is that of the small family where both the husband and wife are employed. The wife's time is so limited that she can care for not more than three rooms. For this reason, we find an increasing vacancy in our six and seven room flats, and a growing demand for the

two and three room modern apartment.

Our late ninety flats were designed to meet the needs of a large family where the wife's main object in life was the care of her home and family, and housekeeping was an art. But today the average wife wishes to spend as little time at housework as possible. This requires the maximum of conveniences so arranged to necessitate the minimum of effort in the care and operation of them. So we find an abundance of flats to rent, and very little likelihood of their immediate occupancy. The only practical thing to do with these antiquated buildings is to change them into two and three room modern apartments, where the situation warrants it, or tear them down and build new structures planned and equipped for modern needs.

ABOVE—HOUSE AT 69 5TH AVENUE, SAN FRANCISCO, BEFORE ALTERATIONS

BELOW—THE SAME HOUSE AFTER ALTERATIONS
Albert Farr, Architect; J. Francis Ward, Associate

Some of the owners of this type of property have attempted to modernize by employing "jerry" builders. Having plastered the front and made a few slight changes to the interior, these owners think they have done all that is necessary to attract desirable tenants. Still these houses remain vacant. If we analyze what the owners have done or rather, what they have not done to them, we will find that they have failed completely to change the proportions, scale, or character of their property. A good coat of paint would have accomplished the same result with a great saving to the owner. Even the most expert designer could not do what they tried to do; that is to go to the building and after looking it over say that by leaving off this and that, and putting on a new entrance

ABOVE—HOUSE ON SCOTT, NEAR GREENWICH STREET, SAN FRANCISCO, BEFORE ALTERATIONS

BELOW—THE SAME HOUSE AFTER ALTERATIONS
Warren Perry, Architect

HOUSE AT 611 JONES STREET, SAN FRANCISCO, BEFORE ALTERATIONS

HOUSE AT 611 JONES STREET, SAN FRANCISCO, AFTER ALTERATIONS
Masten and Hurd, Architects

and tile coping it would make a modern abode out of an old house. Yet that is what is being done every day with such disastrous results.

Modernizing of these buildings is a specialty, and requires the utmost thought and study. A successful modernizing project is not an accident or even an inspiration, as we are wont to think, but the result of long, careful study by a person who has gone through years of training and has developed sound judgment based on practical experience. This is more essential on modernizing than on new work. Modernizing requires the combined efforts of the architect, contractor and sub-contractors, none of whom may be eliminated without seriously handicapping the results.

LEFT—HOUSE AT 2618 BUCHANAN STREET, SAN FRANCISCO, BEFORE ALTERATIONS

BELOW—HOUSE AT 2618 BUCHANAN STREET, SAN FRANCISCO, AFTER ALTERATIONS

Henry H. Gutterson, Architect

LEFT—HOUSE AT 3007 JACKSON STREET, SAN FRANCISCO, BEFORE ALTERATIONS

BELOW—HOUSE AT 3007 JACKSON STREET, SAN FRANCISCO, AFTER ALTERATIONS

Rising and McGuinness, Architects

Schools

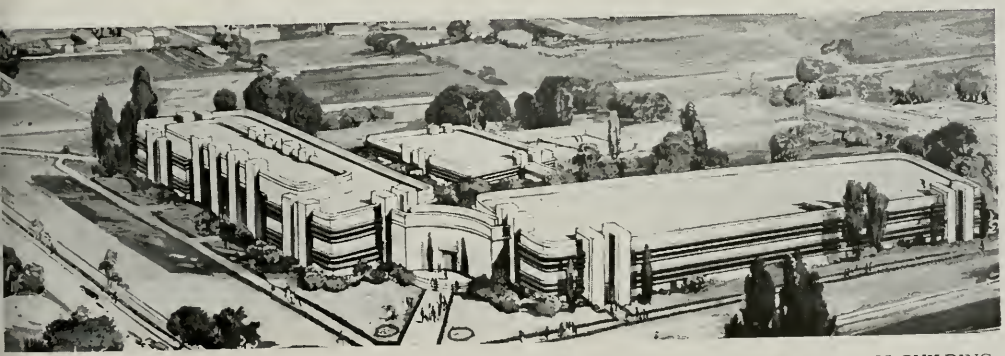
by Frederick W. Jones

● *Los Angeles Develops Some Extremely Modern Motifs*

SOUTHERN California architects have gone modern in school architecture. How the public is going to accept these attempts to create something architecturally different remains to be seen. Two of the outstanding designs which are liable to arouse comment are the Jefferson High School group by Morgan, Walls & Clements, and an experimental elementary school building by Richard J. Neutra.

The Jefferson design, with its rather somber treatment, might offer possibilities as a mausoleum; at least the entrance suggests such a type of building. As a school its greatest appeal is the window space of which there seems to be plenty. The perspective indicates two floors of continuous window panes, having the effect of ribbons tied around a group of box-like structures with an occasional pylon to break the monotony. Our school houses need light and it appears that the students in the Jefferson school are going to get plenty.

Another building showing a radical departure from traditional design in school architecture, is the Neutra elementary school at Bell. The architect, internation-



PERSPECTIVE, JEFFERSON HIGH SCHOOL BUILDING, LOS ANGELES, CALIFORNIA
Morgan, Walls and Clements, Architects

UNIQUE DESIGN FOR AN EXPERIMENTAL ELEMENTARY SCHOOL, LOS ANGELES.

Each Classroom Has Its Own Patio

Richard J. Neutra, Architect

Key to architect's perspective—

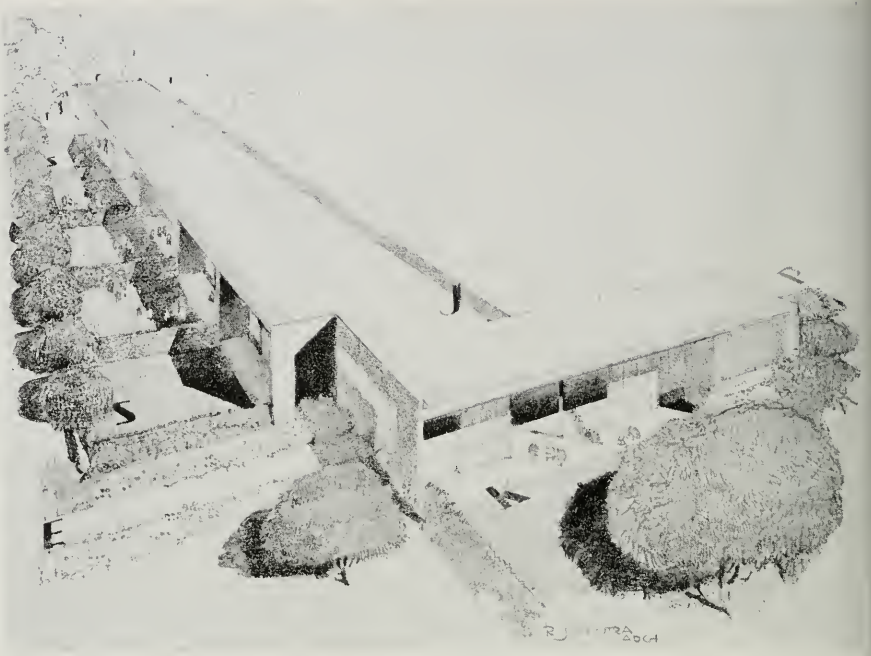
S. Outdoor school room.

K. Kindergarten play ground.

P. Physical training grounds.

E. Entrance to school.

J. Elastic joint for interception of lateral stresses.



PERSPECTIVE, VENICE HIGH SCHOOL BUILDING, LOS ANGELES, CALIFORNIA

John C. Austin and Frederic M. Ashley, Architects

ally known as an exponent of the modernistic idea, has developed a design that at first glance suggests a lumber shed, or stalls for automobiles. Close study of the perspective, however, reveals the successful development of a combination of features that help to make it a creditable example of functional architecture.

In considering the type of construction to be employed, extensive research was made covering various novel construction systems in which the board of education has taken an interest in all available materials. Estimates were made by the architect on six different types of construction. Plans finally approved by the board provide for a structural timber chassis with steel bracing. The foundation will be of concrete with continuous reinforcing and the substructure will be of creosoted timber. The superstructure will be mill construction with 6x6-in. wood posts. Walls are designed as trussed girders, one above and another below the window openings. There will be continuous diagonal bracing in the floors and ceilings and steel tension braces in the division walls consisting of steel rods tightened by turnbuckles. Exterior walls will be finished with cement plaster on wire mesh and interior walls and ceilings will be plastered on metal lath. The roof will be covered with 5 layers of 50 pound felt. Metal timber connectors will be used at all connections in the timber framing. The sliding doors will be of tubular steel and glass, a Fenestra type, and the windows will have Fenestra sash.

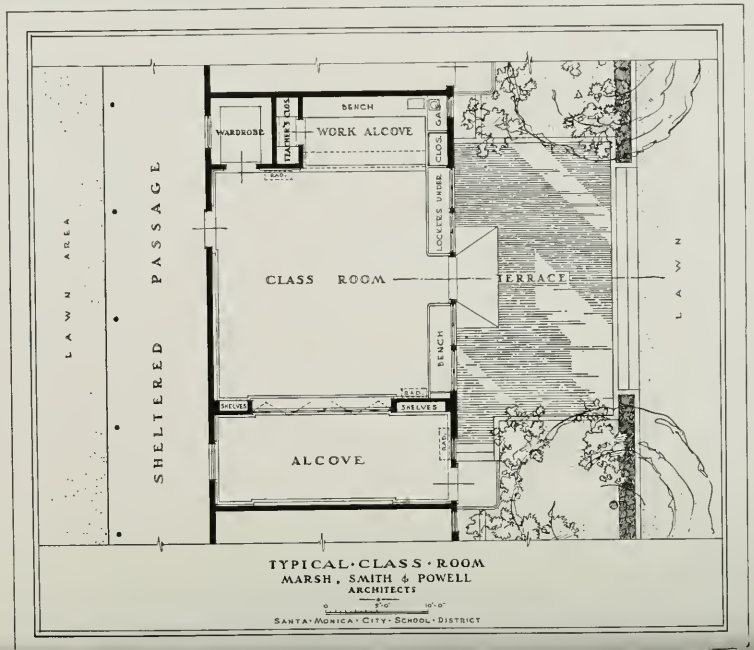
As planned, the building will consist of five classrooms and a one and a half kindergarten units. All the ideas incorporated in it were developed by the architect in discussions with the superintendent of schools and his staff of educational experts and with the valuable and friendly cooperation of A. S. Nibecker, head of the boards architectural department, and the experienced members of his organization. As shown by the architect's perspective which is reproduced here, the result is a very unusual school structure.

The elementary and kindergarten sections of the building are joined in an "L" shape but are in reality individual structures separated by an elastic joint for the interception of lateral stresses. Each of the five classrooms and the one and a half kindergarten units is connected by means of wide sliding doors with its own classroom patio or outdoor classroom. The rooms are oriented east and west and like manual training rooms receive light from both sides to be well distributed from wall to wall. Roof projections over the row of windows and the roll-down awnings curb the direct sun radiation but permit the influx of a wealth of diffused daylight as needed for the intended activity, study and flexible arrangement of chairs and tables. Thus the pupils may be grouped in any part of the classroom and in any manner to suit particular methods of instruction which would be impossible with fixed seating. Each classroom has its sink, gas and electric outlets and material storage facilities as required by the up-to-date educational procedure.

The kindergarten units, facing south, are separated and connected with each other by sliding doors and open through similar doors into the kindergarten play yard.

In striking contrast to the Jefferson and Neutra school designs, are the Venice High School by John C. Austin and Frederic M. Ashley, the San Pedro high school by Gordon Kaufmann and the reconstructed Santa Monica school, by Marsh, Smith & Powell. The last named school has been developed along the lines of the so-called "Santa Monica Plan" which has for its dominating feature a terrace for outdoor

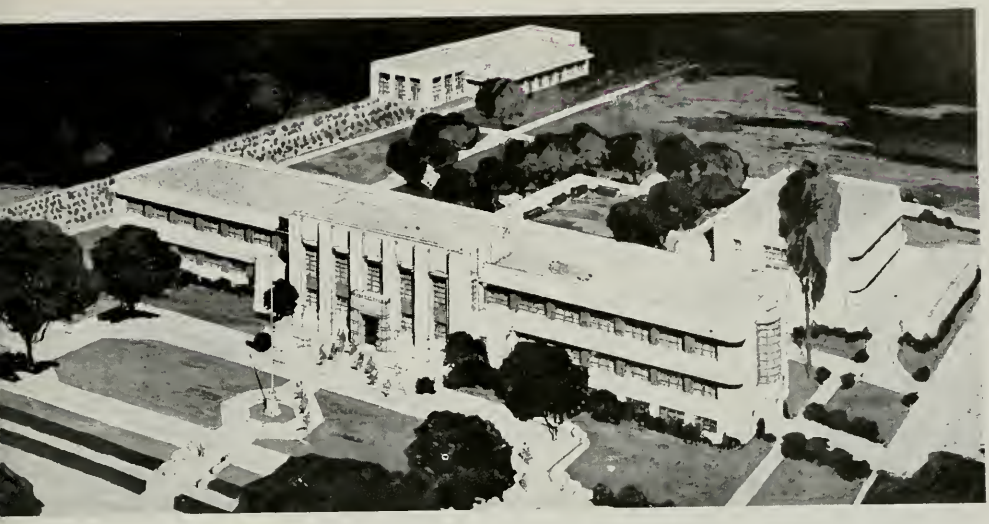
PERSPECTIVE OF RECONSTRUCTED ROOSEVELT SCHOO SANTA MONICA, CALIFORNIA



PLAN OF A TYPICAL CLASS ROOM UNIT IS SHOWN ON THE LEFT

The "Santa Monica Plan," providing a terrace for out-door class activities, has been developed here

Marsh, Smith and Powell, Architects



PERSPECTIVE, SAN PEDRO HIGH SCHOOL BUILDING, LOS ANGELES COUNTY, CALIFORNIA
Office of Gordon B. Kaufmann, Architects

class activities. It represents a new trend in educational procedure.

This building is engineered to meet the rather rigid requirements of the new state schoolhouse construction code. Surplus architectural motifs which have been considered aesthetically necessary in the past, are denied the conscientious architect and he must achieve beauty in his building by qualities of trimness, simplicity of mass and detail, and the studied use of color. Egress from each class room to the outside is direct.

The building is kept one story high for the obvious reason that the possible hazard of a second story is thereby eliminated. An additional influence on this point, however, is that it is also possible to develop the combination of outdoor-indoor classrooms for all classrooms in a one-story building.

It will be noted from an inspection of the plan as a whole, that a maximum of light and air reaches each unit of the plan from all sides. Lawns between the wings of the school, form a protected special play space for the younger children. It is this factor, perhaps, more than the others, which has caused this plan to be rather widely known as the "Santa Monica Plan."

In this school, the architects had the privilege of meeting with the teachers and supervisors collectively and singly in "seminars" at which each individual wall, fixture, and case was freely discussed and "put on the pan." As a result, a classroom plan type for elementary pupils, and a different type for primary pupils was developed. The cold hand of "standard practice" which has made the hideous elementary school classroom of California identical with the elementary school classroom of Maine and all states between, was not laid upon these classrooms. As a result, some functions of classroom teaching hitherto neglected, have been given a place in the planning.

WHAT BABY WOULD NOT THRIVE IN THIS SUNNY NURSERY?

Home Loans

by Albert J. Evers, A.I.A.

● *A Radio Broadcast to the Architectural Profession*

GREETINGS to the architects assembled in various cities of California, and to the home owners and prospective home owners who are "listening in."

Though existing buildings are eligible for insured loans under the Federal Housing Administration, I am going to talk tonight about loans on new dwellings, since they are certainly of most interest to the architects.

These loans cannot exceed $16,000 or be in excess of 80% of the value of house and land. They will be repaid in monthly installments over periods up to 20 years and at a low rate of interest. On the twenty year loan the monthly payment will be about $7.00 per month per thousand dollars. This plan will encourage thousands of people to build homes who were unable to do so heretofore.

Architectural services will be appraised at their full value on both new and existing homes, but no allowance will be made for architects fees if there *was* no such service.

You architects can be of great value to your clients in preparing applications for these insured loans. Your careful study and knowledge of the minimum standards will enable you to advise your clients, and to plan their houses to satisfy the requirements of these standards. No commitment to insure loans on new dwellings will be made except upon complete and adequate plans and specifications. Incidentally, there must be three sets of them with each application. You can also be extremely helpful by taking your client to the lending agency and aiding in drawing up the application. The minimum standards and requirements are easily understandable to you as architects and you will be best able to apply them correctly.

You should all of you encourage zoning and proper city or county planning. for loans in unzoned areas will probably be ineligible for insurance.

Residences in well protected and desirable neighborhoods, well designed, and constructed of durable materials, will receive the highest ratings.

The owners of properties with high ratings will receive larger rebates from the mutual group insurance funds. There is therefore a real value placed upon good design and construction as well as upon location in a desirable neighborhood.

The benefit to the home owner of easier and cheaper financing, the encouragement of better design and standards in residence building, the necessity of protecting neighborhoods and communities by proper zon-

ing laws and planning of subdivisions, the inevitable stimulation to the building industry and to recovery in general—all of these things induced by the provisions of the National Housing Act—make it of the greatest interest and importance to all.

Architects, builders and prospective home owners, owners of existing eligible properties and the public in general, all of you should and will benefit by the far reaching possibilities of this great National Act.

The UNIVERSITY OF CALIFORNIA CAMPUS

A Portfolio of Sketches by EDWARD GEHRKE

FACULTY CLUB, UNIVERSITY OF CALIFORNIA, BERKELEY
CONTE CRAYON BY EDWARD GEHRKE

THIS PORTFOLIO of drawings by Edward Gehrke, is selected as representative of some of his best crayon work. The subjects are familiar scenes on the University of California Campus, Berkeley, with one interesting view in San Francisco — the Mechanics Monument and in the background, the office building of the Pacific Gas and Electric Company.

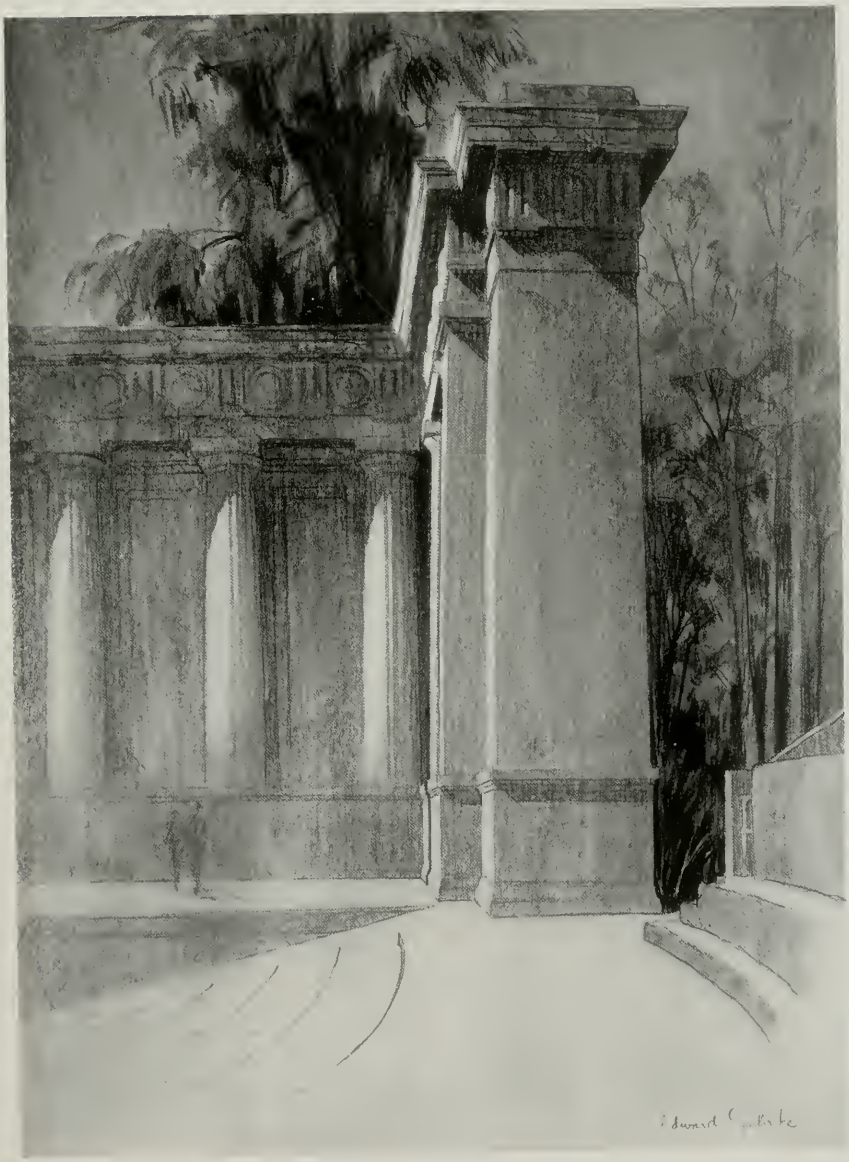
MR. GEHRKE'S drawings are remarkable for their directness of presentation and fine composition. The author is a native of Camden, N. J. He received his early schooling at the California School of Arts and Crafts, later taking an engineering course at Columbia University, New York. His work has received commendation in such prominent offices as William Creighton, Bowden and Russell, and Penrose Stout, New York, and Miller and Warnecke, W. R. Yelland and W. G. Corlett, Oakland.

● North End of Memorial Stadium,
University of California,
Berkeley

Drawing with Conte Crayon by Edward Gehrke

● Entrance to Faculty Glade,
University of California Campus,
Berkeley

Drawing with Conte Crayon by Edward Gehrke.
Two hours time.



● West End of Greek Theater,
University of California,
Berkeley

Drawn with Conte Crayon on smooth Strathmore paper by Edward Gehrke.

Edward Gilbert
1934

● Mechanics' Monument,
San Francisco
Office Building of P. G. & E. Co.
in the background

Conte Crayon by Edward Gehrke.

ARCHITECT'S CONCEPTION OF A WINDOWLESS DEPARTMENT STORE BUILDING FOR SEARS ROEBUCK COMPANY, CHICAGO, ILL., AS IT WILL APPEAR AT NIGHT.
Nimmons, Carr & Wright, Architects

No Windows

● *Sears, Roebuck & Co. Risk $1,500,000 on a New Type of Store Building*

A NEW type of department store is being completed by Sears, Roebuck and Co. in Chicago. This new structure, which is arousing widespread interest, will contain many radical departures from ordinary construction practices, the most interesting of which is that there will be no windows. This innovation, which has been forecast among building owners and managers for some years, is highly controversial. There is a division of opinion even among Sears' executives and in the architectural firm of Nimmons, Carr and Wright, who designed the building.

Sears' officials willingly admit that the elimination of windows in a retail store is experimental. Most of them, however, are convinced that the plan is so perfectly feasible that there is but a negligible chance of failure. Still the windowless store remains in one sense a test — a $1,500,000 experiment.

The evolution of the plans finally adopted by Sears embraces several years of experimentation. Many influences combined during this period of time to fashion the final design. The story of this project may

be an important one in the history of American architecture or it may be merely an account of an interesting side-trip off the main course of development. Whatever its ultimate importance may be, the story is full of interest.

We are indebted to *Buildings and Building Management* for the following details regarding the project:

In the fall of 1929, Sears, Roebuck and Co. purchased the old Becker - Ryan department store, which had for many years been one of the most prosperous retail establishments in the Englewood district of Chicago. The building which housed it was a landmark on the South Side of the city. With its florid turrets, scrolls, gingerbread and other architectural whimsies of the Eighties, it was an almost perfect example of Mid - Victorian retail store architecture.

Nothing could be further from the functional conception of a modern department store than the store quarters taken over by Sears in 1929. The massive, pretentious stone front had all the architectural fripperies which the modernists deplore. The interior was crowded, even cluttered. An addition to the building had created different levels on the same floor, whether by miscalculation or for some obscure purpose long since forgotten. Swinging baskets carried money and wrapped packages over the heads of the clerks and the panorama of almost any floor was a vivid reminder of the typical department store scene of a generation ago.

Sears at first planned to remodel, but the depression intervened and called a halt on this, as on many similar plans. At length, a decision was reached to raze the building—and to erect on its site a structure that would incorporate everything that Sears has learned about retail store planning.

Meanwhile, many interesting things were happening at Sears. There were numerous conferences involving L. S. Janes, national director of display and store arrangement for Sears; M. C. Penticoff, general manager of the company's large Chicago retail district; L. B. DeWitt, general manager of construction; George Carr and other members of Sears' architects (Nimmons, Carr and Wright); and, at one time or another, practically all of the higher officials of the Sears organization.

At these conferences, drastic changes in the plans for the building were discussed. The chief bone of contention was the elimination of windows. This idea was first suggested by Mr. Janes and, although the suggestion was startling at first, its practical advantages began to pile up as the possibilities were analyzed.

One of the disadvantages cited was that the elimination of windows would give the store a peculiar, modernistic appearance that would not appeal to the average customer. Another, was that many customers have a deeply ingrained prejudice against buying fabrics, style merchandise and certain home furnishings without first inspecting them by daylight. The advantages of the scheme and its disadvantages were carefully weighed.

Sears had already had some experience with a windowless building, for its building at the Century of Progress exposition in Chicago had no windows. The Sears display department, in working in this World's Fair structure, had soon found that the absence of windows greatly simplified the task of injecting power and drama into the displays. Lighting effects could, it was found, be maintained with greater consistency, and Janes and his display department felt that they had learned something of great importance from their work at the World's Fair.

Furthermore, research in store interiors had been conducted for several years by Janes in collaboration with the company's national merchandising and operating divisions and the conclusion had been reached that the functional advantages of windows had been lost in the evolution of the modern department store. The findings of this research were presented at the conferences, with the recommendation that windows be eliminated.

George Carr had some equally significant information. He showed very definitely that windows are of negligible utility in lighting the average modern department store and that they are actually a detriment in ventilating it. And M. C. Penticoff had some pertinent figures on the depreciation of merchandise through grime and dirt, most of which enters a store through the windows.

In the end, the conferences resulted in the decision to build a store without windows, and Sears officials approved the plan, some of them with misgivings, but most of them with the feeling that an important step in the progress of retail store construction was about to be taken.

Although the new Sears building is believed to be the first instance where windows have been entirely eliminated from a department store, theaters have, of course, for many years been built without windows. The theory behind this custom in theater construction is in accord with one of the reasons behind Sears' decision: that windows are a distracting influence in a structure where it is important that attention be focussed at certain points on the inside.

The conferences between Sears executives and the architects demonstrated very definitely that windows no longer possess real utility in furnishing light in a department store. In this connection, Mr. Carr states:

"Ordinary analysis will reveal that windows have no valid utility in the modern department store. Such a negligible percentage of the total floor space is affected by daylight in the average building of this type that windows are not worth considering as a source of light. Their only possible use in this regard is for the examination of textiles and style merchandise, and only a small percentage of customers, I am told, insist upon viewing such merchandise by daylight rather than by the almost exact reproduction of daylight made possible by modern lighting systems.

"Otherwise windows actually operate in conflict with a store's lighting system, daylight and artificial light mingling in a confused and unpleasant way. They interfere with the heating, ventilating and air conditioning systems, setting up cross currents and cross-influences that militate against the efficiency of these systems.

"To put the lighting issue more specifically: If the walls of a department store were solid glass and if there were no obstructions to the passage of light (such as shelves, counters and show-cases) light would be effective only thirty feet from the wall.

"When one considers the number of barriers to the passage of light (shelves, counters and show-cases) that are necessary to the conduct of business in any store, one must conclude that daylight is an inconsequential factor in the average store."

As the meetings on the new store proceeded, however, one very serious objection kept obtruding itself. This was the objection lightly passed over by Mr. Carr —that of the generally recognized customer prejudice against purchasing certain types of merchandise without daylight inspection. Some of the merchandise executives whose lines were among those that customers like to examine by daylight pro-

tested strenuously against the elimination of windows. Finally a compromise was decided upon.

Glass columns, towering 58 feet above each of the four entrances to the new store were conceived as the answer to this objection. These will be the nearest approach to windows in the store. Producing fountains of daylight in spots where daylight is demanded, these columns are strictly utilitarian and stay within the definition of the purely functional.

Although the design of the store will result in a strikingly unusual appearance and although some of the claims made for the advantages that will accrue from it are yet to be proved, Sears architects and engineers maintain that it is functionally sound and an advance upon anything of its kind ever attempted in this country. They cite as some of the benefits that will result directly from the elimination of windows:

(1) Air conditioning and scientific ventilation are greatly simplified in application and operation.

(2) Savings are assured through the eradication of damage to stored merchandise, resulting from infiltration of smoke, dirt and grime through windows; also from the deteriorating effects of bright sunlight on certain kinds of merchandise.

(3) Street noises and all disturbing sounds from outside will be reduced to a minimum not only because the store will be sealed tightly, without windows, but also because glass will enclose less than four per cent of the building's surface, as against from 20 to 30 per cent glass enclosure for the average department store.

(4) Approximately 6,000 square feet of floor space will be saved to the store's merchandising departments and the efficiency of the entire interior can be greatly increased through better arrangement because provision need not be made for windows in the locating of counters, showcases, shelves and other fixtures and equipment.

(5) Operating costs of heating and cooling equipment will be substantially lower than the average for department stores of about equal size.

(6) Lighting of uniform character and intensity will be maintained throughout the store, abolishing the customary clashes between store lighting and daylight.

(7) Greater power and effectiveness will be possible in the display of merchandise.

The design of the building has already stirred up a controversy of sizable proportions. The fight is centered mainly around the window issue. Some declare that the store will point the way to a revolution in department store planning and will have a definite effect on other commercial and business buildings in the future; others contend that the design is too essentially a compromise between the functional and the traditional to be of great importance.

Job Wanted

by Elmer Grey, F.A.I.A.

● *Versatile Pasadena Architect Writes Pencil Points of his Unsuccessful Attempt to Crash the Movies*

A YEAR or so ago when the depression began to take on the aspects of a long drawn out affair and the debit side of my office ledger showed, month after month, an excess over the credit side, I began to wonder whether there was anything besides architecture that I could turn my hand to in order to make both ends meet. To change vocations at the age of sixty-three was not a pleasant prospect—but neither was a mortgage on the home or loans on life insurance policies!

An inventory of my resources of ability, experience, etc., and of the possible places where these could be put to use, turned my gaze toward the moving picture studios. These were at least busy, and I knew that they contained "art departments" devoted to the designing and construction of "sets," some of which latter are more or less architectural in character and form the backgrounds of pictures. I knew that these art departments were headed by "art directors," who preferably were men of artistic ability, widely traveled and possessed of some dramatic sense. I reflected that I had been something of a globe-trotter myself, that a good part of my life had been spent in trying to absorb the beauties of the world, and that one of my weaknesses had always been that I liked to dramatize situations in which I found myself! Why might I not qualify? I decided to try.

One of my friends who had been an able art director years before, when moving pictures first came into being, advised me to aim high, on the score that to start at the bottom would make it too hard to work up. But I soon found that that advice was of questionable timeliness. Moving pictures had changed considerably since he had been in them, and sound pictures, particularly, had made their technique quite different. I found that most employers now require some familiarity with modern picture technique as a prerequisite of employment.

But, not knowing that, at first I aimed directly at an assistant art director's position, and my first try was at the Metro-Goldwyn-Mayer studio. The M.G.M., as it is commonly called, consists of a square

block or more of frame buildings thrown together without any apparent plan and in ways which the rapid growth of the industry and its consequent emergencies doubtless made necessary. This miniature village, called the "lot," is intersected in places by narrow streets and one's first visit to it is interesting because of the varied life to be seen there. Men and girls with makeup on their faces and in heterogeneous costumes are much in evidence. Joan Crawford passed in an open roadster. Johnny Weismuller was talking to a group. One girl without makeup on but with a much be-freckled face whom I passed but did not recognize, I was told was Katharine Hepburn.

My letter of introduction was to Mr. Cedric Gibbons, the well-known art director, but he was directing at the time so I was asked to meet Mr. Fred Hope, another art director, instead. Mr. Hope happened to be familiar with my work and made things very pleasant. He took me out to see one of the sets then building, that was used in "When Ladies Meet." It consisted of two sides, the roof, and part of the interior of an attractive English cottage and I was amazed at the degree of completion to which some of these sets are carried, even though made for temporary use. This one had tiles on the roof made of some perishable material, but tin gutters had been installed neverthless and even downspouts—and all this inside of a roofed and sound-proofed building! I inquired why the necessity of the gutters and downspouts and was told that they might some day wish to move the set outdoors, in which case moderate precautions against rain would be desirable. On the interior, the drapes, rugs, and hardware were all genuine and of the best material. The trunk of a real sycamore tree formed part of the composition outside, although the branches and leaves were artificially supplied. Real tile was used for paving the court, but the grass growing in its joints was of some dyed stuff like excelsior. I learned some of the momenclature and technique of moving pictures at this time. A "wild wall" is one that has been so constructed as to be easily removable, so the camera can shoot through the space thus made available. The opposite sides of a room are often not parallel, to afford a wider scope for the camera's lens, the lack of parallelism not being noticeable on the screen. Mouldings which it is desired to have register definitely are detailed with very pronounced projections. During this visit I also passed through the large drafting room, where I found two of my architect acquaintances and where two others introduced themselves as members of our profession.

Mr. Hope, who seemed at the time to be much overworked, said that he would like to be able to break me in to relieve himself. He thought he could leave the execution of an architectural set in my hands with the feeling that it would be properly carried out. The knowledge of a trained architect in their department would not only be valuable at times, but might raise the standard of their work, he felt. I suspect that having a reputation as an architect acted as a hindrance, however, as well as a help in obtaining a position there; for in a later interview he dropped the remark that his collaborators were afraid that I could not "stand the gaff"; and when pressed for an explanation said that they doubted whether I could stand the hasty way the work had to be turned out. Whether or not that had anything to do with final results in my case I do not know, but as weeks and months passed he was unable to create an opening for me. He gave me a letter to Mr. Van Polglase, art director of R.K.O., who advised me, if unable to connect with Mr. Hope, to try

for a position of "sketch-artist." This is a man who picks out from accepted scenarios the most dramatic scenes, visualizes them and makes sketches of them for the better apprehension of the art director—or perhaps the art director picks them out and asks him to render them. No such position was vacant at R.K.O. at the time. At M.G.M. such work has been largely supplanted by the use of scale models.

I next went to the Fox and United Artists lots, at neither of which was a position secured. About this time a regular architectural commission came into my office, so my activities with the studios were stopped for awhile. When, some months later, this work was completed, the quest in the movie colony was resumed.

This time, in order to land a job more readily, I decided to aim lower. M.G.M. and R.K.O. were tried again but without success. Then I visited a studio the name of which will not be given for reasons which will become apparent. A new production was just about to be launched there and consequently they were very busy. Because of this I was turned over to the head of the drafting room. He was familiar with my work and promptly offered me a position, but I don't think wanted an architect in his employ—at least not this one! He bemoaned the task of breaking me in (which Mr. Hope had minimized) and stipulated that, although they worked but a five-day week, I would have to work nights frequently, sometimes until three in the morning; and that then I would be expected to be on hand again at eight the following day! "When we get into a jam the work just has to be gotten out," he declared. Of course—and I was not bright enough to ask him why in such cases they did not figure ahead a bit and utilize the remaining day in the week! I did demur, but to no avail. He could make no exception because the other workmen would object, he said. I wondered, if I ran a large drafting room and had in my employ a man who was valuable but was unable to do a lot of night work, if I would let the other help dictate just how much of such work that man was to do. I wonder if I would not reserve that privilege for myself. I recalled some of the things I had heard about these movie jobs: "a dog's life," "a mad-house," etc., and decided not to accept the offer; also to find out if some other places were not managed differently.

For many years I had known the wife of a camera-man in one studio which I had not yet visited. She very kindly arranged an interview for me with its art director. He was a man of fine appearance and courtly manner and received me cordially. Some reproductions of my work which I had brought along were first examined and then he said that, although he could not give me a position immediately — "that could hardly have been expected" — he would keep me in mind and the chances for ultimate employment were "very good." In response to my query about working hours and night work, he said that a lot of night work was all foolishness, that they very seldom worked nights at his establishment and never within his recollection had they ever worked until three in the morning. He slid my card (upon which I had written my phone number and the hours morning and evening when I would be most apt to be at home) under the glass top of his desk with the remark, "I will call you up one day and you are to report the next"! In the casual view of his plant which I obtained I was struck by its well managed appearance. Many of the assistants had separate rooms; and a conversation between some of them relative to their work which I could not help but overhear gave me the impression that probably they were of higher calibre than the average. But waiting day after day and week after

week for a phone call that would change over night one's entire manner of living is not the most enjoyable business. Some such weeks have already passed as I write this. I cannot leave the house during the specified hours for fear of missing a call. Many plans are held back. Not a satisfactory programme for long continuance!

But these are changing times! And so, in retrospect, have been the preceding years. They have produced such vast technical changes that even now we do not fully comprehend their effect upon our economic life. For example: this studio is not more than a half mile from where, some thirty years ago when I first came to California in search of health, I worked as a hired hand on a ranch! One of my duties then was exercising a tall and spirited saddle horse—another was milking a cow! And now, if I am again employed in that locality, it will be in helping in a kind of technical work which then was unknown! The advent of this work, motion pictures, did not take away employment as new inventions so frequently are accused of doing, but greatly increased it. Other innovations have acted differently, however, and it is of course the readjustment of our economic life to fit them that is somewhat responsible for the present unrest. When the readjustment is made no doubt we shall all be much better off.

Positions in these motion picture art departments are, I am told, seldom permanent; most of those who hold them move about from one studio to another as the demand for their work comes or goes. In the event of my joining this transient army my office in Pasadena will consequently be retained. But its doors will be closed, its desk and drafting boards unattended, and its phone number switched to my house —all waiting for the time when general building activity will be resumed. Or — who knows?—there must be some positions of the kind which grow and do become permanent. Certainly there are plenty of possibilities for satisfaction in the work. If a man is able in it I can imagine his becoming well-nigh indispensable. There are no schools turning out art directors by the hundreds; they are self-made; and producers do well to accord them recognition on the screen. To their skill much of the success of modern picture making is due. They have it in their hands to increase enormously an appreciation and enjoyment of good architecture among the masses. The buildings they depict are not permanent to be sure, but they reach many more people with their message than do many permanent buildings, and often in ways that make very lasting impressions. It must be gratifying to feel that one is composing pictures which, in their ultimate life-like realism, enthrall and instruct audiences of thousands the world over!

Jerry Builders

by A. A. Brown, C. E.

● *Poor Construction Invites Termite Attack*

THE "jerry-builder" has, for years, been a thorn in the side of the legitimate construction industry. The entire building operation as conducted The entire building operation as conducted by this type of speculative builder has tended to undermine public confidence in the industry as a whole. Recently I saw a home built by one of these operators, where the concrete foundations were omitted entirely under one of the corners of the building. The sills were resting on the ground. It was not until cracks appeared in the superstructure, due to settlement, that the owner became aware of the condition. In the mean time termites had infected a considerable area of plates, studding, joists, flooring, sheathing, etc.

An inadequate foundation is a common fault to be found in these "jerry-built" homes. I have seen very large numbers of such structures where the top of the concrete foundation was from 6 inches to 12 inches below the adjacent ground at one or more places under the exterior walls, thus exposing the wood to both termite and fungi attack. In one home, the top of the concrete foundations was below the exterior adjacent ground surface for the entire distance on both sides of the house; see Fig. 1.

The concrete foundations of many better class homes built on hillsides are below the ground line on the up side, often due to the accumulation of soil at the bottom of the slope. A considerable percentage of such hillside property is supported upon foundation timbers greatly weakened by termites and fungi. In this region, where earthquakes are a constant menace, the danger to life and property constitutes a real hazard, particularly at the time of a severe disturbance.

The dwellings illustrated in Fig. 2 suffered severe damage at the time of the Long Beach earthquake, March 10th, 1933, due to collapse of the foundation structures. Many of these failures were due, in part, to depredations of the termites, thus weakening the underpinning. The difference in cost between poor and good construction, it is estimated, does not exceed five percent of the investment. Poor building practices, while saving a little in the first cost, usually require very heavy maintenance charges and at times of a

The illustrations with this article were made available through the courtesy of the University of California Press. The second edition of "Termites and Termite Control," A Report to the Termite Investigations Committee, Professor Charles A. Kofoid, Editor-in-Chief, is now available. Substantial changes in, and additions to, the first edition have been included in the second edition.

Fig. 1—(a-h) Typical examples of serious damage to frame houses at Long Beach and Compton, California, in the earthquake of March 10, 1933. Many of these failures were, in part, due to termite damage to under-pinning, as shown in details, i-j. The use of proper construction and wood, not attacked by termites, and fungi, would have prevented all but minor damage.

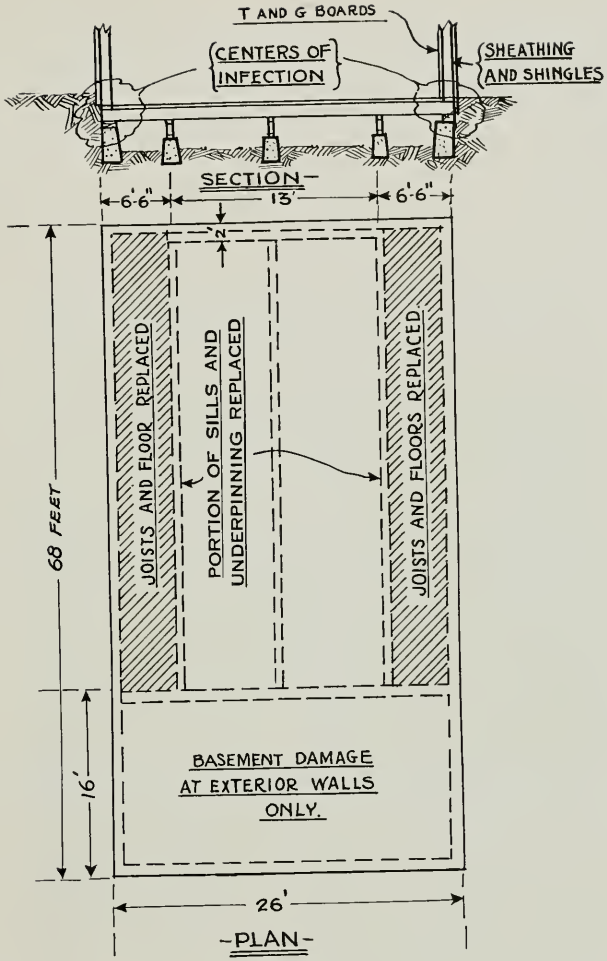


Fig. 2—Plan of building seriously damaged by damp-wood termite. Earth in contact with the wood frame is a source of infestation.

severe earthquake may entail the loss of the entire investment.

There are a vast number of poorly constructed buildings existing today in California, a large percentage of which are breeding places for termites, Figs. 3 and 4. In a weakened condition they constitute a public hazard. Unattended, they will become a menace. It has been found that termites prefer new, fresh cut lumber to old seasoned stock, hence, the termite reservoirs in old buildings become a threat to adjacent new structures, which may be more substantially constructed.

A termite colony once established is potentially immortal. It can live and extend its burrows as long as it can maintain access to wood. Exploratory tunnels are driven to find new sources of food. When wood is not available in direct ground contact the subterranean termite builds covered burrows, of a dirt plaster, over cement walls, even up to the second story in buildings, in search of cellulose containing materials. As the difficulty of obtaining an adequate food supply increases with the density of the termite population, the measures necessary to be adopted, in order to prevent these insects from further extending their depredations, become more complex.

As early as 1929, the California State Legislature took cognizance of the termite problem. So called "Termite Control Operators" in many instances had made the

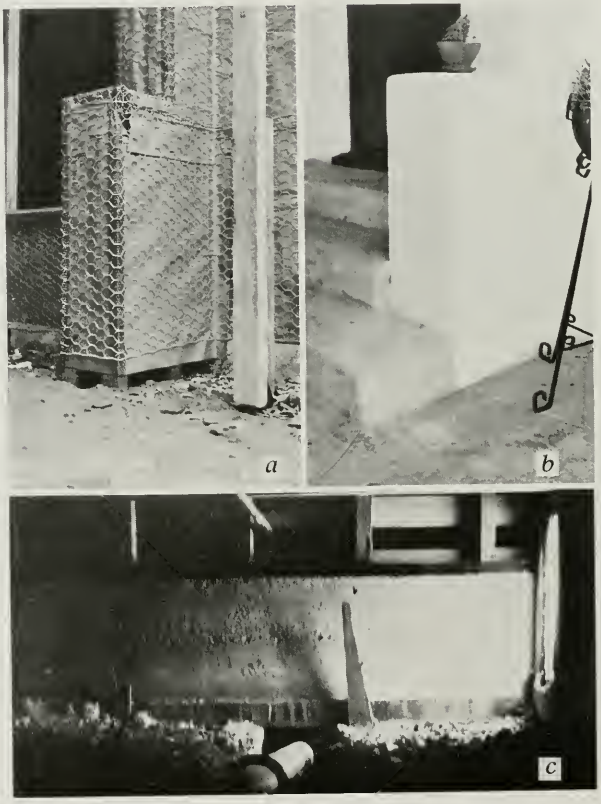


Fig. 3—a—before, b—after completion. The wood frame of butress wall is in contact with the soil, lacking a proper foundation. The earth fill supporting the concrete steps is banked against the wood frame of the house below the entrance and against the side of the buttresses providing conditions favoring rapid destruction of timber by decay and termite attack. (c)—Form board left in place along interior of foundation wall. Wood forms buried in the soil provide breeding places for subterranean termites.

eradication of these pests a "racket". In an attempt to correct this abuse a law, passed by the 1929 legislature, required that all persons, in this state, engaged in the business of repairing structures damaged by termites, be qualified and receive a certificate issued by the Agricultural Commissioners of the counties in which the work was done. The Agricultural Commissioners were not accustomed to handling building problems and due to their united opposition the law was repealed, by the following legislature.

This is a problem which should come under the supervision of the superintendent of building operations in our cities. Modern plumbing, heating, ventilating, electrical, etc., installations and repairs call

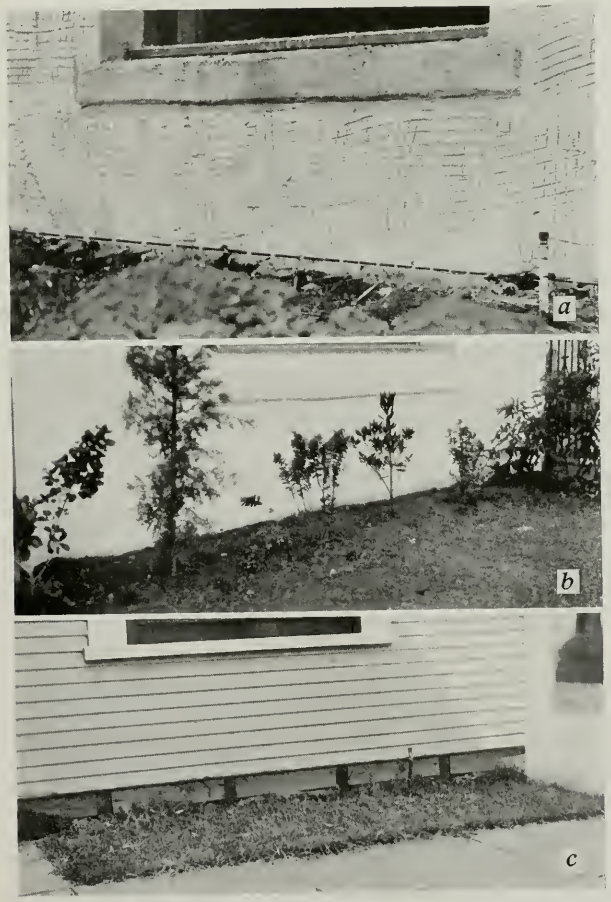


Fig. 4—Conditions at the foundation which invite attack by subterranean termites. (a)—Foundation wall too low. Dotted line is just above the top of the sill which rests on the foundation wall. (b)—Same house as in (a), after the top-soil had been placed and planting completed the grade level was above the sill. (c)—The ends of 2 inch by 12 inch floor joists as shown rest on concrete foundation wall, the top of wall being 9 inches below the grade level of the soil. The ends of the joists were so badly damaged that they had practically no bearing on the foundation wall.

for specialists in those branches of the building industry. In the same way termite control, eradication and prevention should become a new phase of the building industry. To the architect or engineer who prides himself in creating enduring structures the problem becomes at once one of prevention whereas the pest control operator is accustomed to make repeated applications of remedies designed primarily to control pests. These differences in approach to the termite problem are fundamental. The one would prevent damage, the other retard its progress.

Speaking to the members of the Building Officials' Conference, meeting in Monterey, in the summer of 1933, the writer, said in part: "The Termite Investigations Committee recommend that wherever earthquake and termite hazards prevail preventive measures against termite damage be established and continuously enforced. This can be accompanied by adequate provisions in building-codes, by official inspection of buildings, by approved methods of construction and the use of suitable building materials, and through the architect and structural engineer in design, construction, and in supervision, and by adequate inspection on the part of the building department. For protection against damage by earthquakes the Committee also recommends that structures damaged by termites be adequately repaired by the restoration of all weakened structural members, and that sources of infestation be removed.

"That a termite problem exists over wide areas of the United States can now be accepted as an established fact; that measures of control of termite damage should be established, is no longer a debatable question. Some rational measures for the control of these insects should be written into the building code of every city in California."

This problem is not confined to structures built entirely of wood; termites are frequently found doing damage to furniture, equipment, records, etc., in fireproof and semi-fireproof buildings. Termites find access to concrete structures through construction joints, shrinkage cracks and along pipe and conduit chases passing through the basement walls, and by means of concrete form spreader blocks left embedded in the concrete. A very common source of infestation is concrete form lumber left in place after the completion of construction operations; another source of infestation is the dumping of rubbish, containing cellulose, into back-fills around retaining and foundation walls.

The adoption of sanitary measures for the proper disposal of building rubbish, unused scraps of wood, paper sacks, burlap, etc., will aid materially in reducing the reservoirs of termite food, thereby assisting in the control of subterranean termites, in the soil, under or around buildings.

Acoustics

by Michael Rettinger

Consulting Engineer Solves an Architectural Problem in Sound Insulation

THERE is little doubt that extraneous sound in a factory or office is the cause of much fatigue in a worker owing to the necessary expense of nervous energy in resisting it. The fact that in time a worker can accustom himself to noise does not decrease his expense of energy in resistance and consequent added exhaustion at the end of a hard day. As some one rightly said: "It is of value to bear in mind that, from the economical point of view, noise, even though of slight intensity, causes a marked diminution in capacity for work, and a diminution of output which may fall as low as 40% of the normal."

Thus with the progress of time, with traffic noise in cities liable to increase rather than decrease, new problems are constantly thrust upon the building industry. One of the most complex of these, which on competent study, however, nonethe-less permits of a complete solution or even solutions, is the insulation of sound. In the planning of the NBC studios for Radio City, for instance (although this really represents a special type of building construction), the staff of the NBC in conjunction with the architects and engineers of the Rockefeller Center devoted several months to this question of sound-insulation, with the result that, now, there exists an attenuation of 100 decibels or more between studio units. This achievement is the more remarkable if it is taken into consideration that these studios are housed in a steel frame building, a type of structure ordinarily exceedingly transmissive of vibrations.

One of the principal fallacies incorporated in the innumerous proposed schemes of sound-installation rests upon the incorrect belief that products and constructions which offer insulation of heat are effective also in the insulation of sound. Sound-insulation and heat-insulation are separate problems, and while types of structure may combine the solutions for both, they do not go on the exclusive merit of being a solution for one. The very fact that heat waves and sound waves are completely different in nature should make the cautious one hesitate to accept readily schemes proposing to be good heat and sound insulators at the same time.

To what an extent sound is transmitted through an opening may be illustrated by the following example: Assume that a window is drawn up so highly as to leave a rectangular opening of 100 square inches. Furthermore, assume that the conditions outside and inside the room are such as to cause a sound intensity of 50 decibels in the room. Now draw down the window so as to decrease the opening to one square inch, which, in other words, means decreasing the "open window area" one hun-

dred fold. While thus only one hundredth of the former amount of sound energy can enter the room, nevertheless the loudness will not even be reduced to one half, it being in fact still 30 decibels.

A word may be said here about the decibel, the unit of loudness. One decibel represents approximately the increase of loudness which is easily perceptible. To find the difference in loudness between two sounds we multiply the logarithm of the ratio of their intensities by 10 or, since intensity is proportional to the square of the pressure amplitude, we multiply the logarithm of the ratio of the pressure amplitudes by 20. Thus, if S represents loudness, E energy, and P pressure amplitude, then for two sounds we have for the difference in loudness in decibels

$$S = S_1 - S_2$$
$$= 10 \log E_1 / E_2$$
$$= 20 \log p_1 / p_2$$

In order to understand the action of sound-insulation and its effect upon the design of sound-proof structures, one should bear in mind that transmission of sound, next to occurring through openings, may take place either by acoustical refraction in the dividing medium or by the membrane-like vibration of the whole. While transmission or refraction of sound from one medium to another, as from air to plaster or stone, is exceedingly small, so that in practice refraction effects may be ignored, the transmission of air-borne sound by a vibrating partition may at times be very high indeed. In fact, a partition may be bulged by the sound pressure, and if the periodicity of the sound waves corresponds with the natural period of vibration of the partition, the transmitted sound will be increased in loudness by resonance. The speaking voice will deflect a 4-inch stud partition of normal dimensions as much as one-hundredth of an inch in the middle, while the low notes of a powerful organ can set such a partition into vibration so much that the vibrations of the partition become visible.

Solid-borne sounds, such as vibrations generated at the wheel base of heavy street traffic, are often transmitted through the ground to foundations and travel up piers and stanchions with but very little attenuation and with a velocity of about a mile a second. As the density and elasticity of two media such as wall and air differ greatly, these vibrations are not readily refracted from the solid structure to the surrounding air, although the compressional wave in the solid is readily communicated to large walls and floors, which surfaces are then made to vibrate like the sounding board of a piano.

Whenever possible the problem should be attacked both at the source of vibration and in the buildings themselves. The most effective way to eliminate these vibrations in the buildings is to introduce discontinuities in the paths of the conducted sounds, these discontinuities consisting of materials which differ widely in elasticity and density from the solid structure of the building. It is futile to introduce porous materials such as slag or pumice between studs or joints as a means of insulating both solid-borne and air-borne vibrations. These materials do not act as discontinuities, and may indeed sometimes act as bridges between partitions which would otherwise be separated. When foundations are built they should be constructed upon a resilient layer having the requisite elastic strength and compliance, and particular care should be taken to prevent the arrangement from becoming waterlogged, as water transmits vibrations with considerable ease. The various members of the structure should be isolated from each other by resilient pads of lead and asbestos, provided of course that such an arrangement will not result in serious loss in structural rigidity.

Pure Air

by O. W. Ott
Consulting Mechanical Engineer

● *Heating System Should be First Thought of an Architect Planning an Air Conditioning Set-up for the Home*

IF we define air conditioning as heating and ventilating brought up to date, or as an extension of the problem of heating and ventilating our buildings, then architectural practice will be of high class or mediocre, according to the degree to which the individual architect gives complete and careful consideration to this modern subject.

Primitive man employed fire in the open in a crude attempt to keep warm. From the charcoal pan of the Egyptians, set on a hearth in the center of the room, to the crude fireplace brought by the Pilgrims to New England, the development of heating for comfort was practically nil. The first real progress came with the Ben Franklin stove in 1744. In the early part of the next century, the stoves were moved to the basements and thus, hot air furnace heating was developed.

Then, the arrival of the multiple story building brought with it the need of more positive distribution of heat, and as a result, heating by radiators filled with hot water or steam came into use. During the last two centuries, the span of life has increased twenty years. This lengthening of human life come from scientific enlightenment on healthful living conditions, and the improvement in heating and ventilating systems has done much in making possible more healthful living conditions.

The human power plant and its body temperature control system had to carry on under most difficult conditions before the days that science developed modern heating systems. It is little wonder that half of the Pilgrims who first landed at Plymouth Rock died the first winter, for recovery from even a slight illness under such living conditions was difficult of accomplishment.

Comfort air conditioning is today defined as the simultaneous control of temperature, humidity, movement and purity of the surrounding air, to produce the most healthful environment in which to carry on the bodily processes of living. It is divided into five distinct phases—heating, cooling, humidity control, air cleaning, and air motion and ventilation.

It is a peculiar paradox of modern civilization that the protection of property and the improvement of industry always comes first, and that the protection of life and im-

provement of health are generally secondary. In industry, precise control of heating and humidity has long been given greater attention than it has in the home. Even the other phases of air conditioning —cooling, air cleaning, and air motion and ventilation, were carefully worked out for industries of many kinds long before it was conceded that even an air conditioned theater was of any particular advantage. Our textile and tobacco industries many years ago turned out better products and attained increased production by air conditioning. Today some 300 kinds of industries employ air conditioning to more accurately control their production.

The first air conditioning system which included the cooling phase to secure greater human comfort, is said to have been installed in a Chicago theater in 1918. Today no theater of any size would be planned by any architect without a complete air conditioning plant, if that architect fully considers the owners' best interests. At least he will design the initial heating and ventilating installation so that it will be possible to add the cooling, air cleaning and humidity control phases at a later date.

This same basis of planning should hold true for the architectural design of all types of buildings from the modest home to the skyscraping office building. The initial heating installation should fit the completed picture. It should be such that it will be perfectly possible to add the other phases of air conditioning without starting all over and ripping out the initial heating equipment.

As the public becomes interested by the national advertising campaigns of the many old line industries that have taken up air conditioning, they will then become awakened to the real place of air conditioning in making the air envelopes in which they live more suitable for adequate cooperation with the body temperature control mechnaism. They will then demand that the building heating system be modified to provide at least all phases of winter air conditioning. The heating plant will have to include humidity control, air cleaning and air motion, over and above the time-honored heating phase only. This means that any heating plant designed or reconstructed today must be so arranged that these phases or functions can be readily added, if they are not initially included, without completely tearing out the work first installed.

Today the demand for summer comfort is becoming so insistent that the initial plant should also be carefully laid out to include cooling at a later date if the cooling equipment overruns the budget when the building is first designed. It will not require many days of torrid summer heat to convince the home owner who patronizes the air-cooled restaurant or theater, that air cooling would be very desirable in his home.

It is commonly predicted that an all-year air conditioning plant will become just as essential for the modern home as up-to-date plumbing or proper architectural design. In the milder climates, many architects have regarded the heating system for the home as only a minor problem, and have been content to specify room space heaters or unit furnaces as a last minute solution of the heating problem. That this afterthought relegation of the heating system to the top row gallery seat is about to become obsolete, is almost a foregone conclusion.

A bewildering array of apparatus has already been placed on the market, under the enticing caption of air conditioning. The selection of proper equipment by the architect has thus been made more difficult, because for each phase — heating, cooling, humidification or dehumidification,

air cleaning and air motion — there are many ways of accomplishing the same results.

For the gas heating phase, steam, hot water and hot air are all available, but with certain limitations in each case. Hot air heating, when applied to air conditioning, necessarily demands a central source for treating the heat-conveying air. From this central source, two systems of ducts must extend to the individual rooms, one system to deliver conditioned air to the rooms and another to bring reurn air back from the rooms for treatment. It is comparatively simple to tie the modern well designed gas warm air furnace into a complete air conditioning installation on this central source basis, wthin certain limitations. Particularly so is the gas-fired furnace capable of dovetailing into the complete air conditioning ensemble.

It is obvious that the warming of air to serve as a heat conveying medium can be done by indirect steam or hot water coils equally as well as by the direct fired furnace. Many an old time heating system used steam or hot water filled pipe coils with a fan to force air through the coils and thence into sheet metal ducts connecting to registers in each room. Such installations were generally one way systems with no attempt to bring return air back for reheating. Today the cooling, humidity control, air cleaning, and air motion and ventilation phases of air conditioning make it highly desirable to add the return air duct system.

Limitations for duct systems are imposed by the requirements of excessive fan power for overcoming the resistance of ducts of considerable length or excessive space for the accommodation of the ducts. To split a too extensive duct system down into a number of conditioning plants for individual rooms or groups of rooms is of course obviously possible and at the same time questionable on account of the increased cost of installing cooling, humidifying or dehumidifying, air cleaning, and air motion equipment for each group of rooms.

Gas hot air heating as a starting point for the initial heating phase of a complete air conditioning plant is therefore primarily best adapted to moderate sized homes and relatively small buildings of other classifications. Then again, another problem may further limit the usefulness of the warm air furnaces as a heating source. Perhaps the architects' client wants the conditioned air served only to certain of the living rooms with other rooms provided with heating only. Under such a condition, the gas-fired steam or hot water boiler as the prime source of heat units may fit the case in hand to better advantage. Conditioned air for the living rooms can be heated indirectly by fan circulated fin type heat exchanger units and direct steam or hot water can be piped to direct radiators in the rooms where the heating phase only is demanded.

When the lengths of duct systems for conveying conditioned and return air become excessive, difficult of design, generally unwieldly or too costly, then unit conditioning plants served from a gas-fired hot water or steam boiler can be localized to suit group room arrangements. The unit conditioning plant should include fan, filter, humidifying and cooling units, in addition to the indirect fin type heating coils. The steam or hot water heating boiler can be installed at a central location so that the piping system will not only serve the heating coils of the air conditioning units, but also direct radiators in such rooms as require heating only. Thus a compromise can be made which will materially reduce the installation cost and also permit of serving conditioned air to selected rooms of a building.

As opposed to the air conditioning installation which serves the individual rooms by duct systems, which convey conditioned air to the rooms and return air back to the conditioning equipment, is the individual room unit system. A unit machine is placed in each room and air is taken from the room, properly conditioned and then recirculated in that room. The unit conditioner contains heating coils, cooling coils, humidification apparatus, air filters, and a motor driven fan unit. This fan unit, in addition to moving the required quantity of air through the unit for conditioning treatment, also establishes local air motion in the room in which the unit is placed.

In many respects, the steam or hot water heating plant with room unit conditioners has many real advantages over the hot air furnace and duct system for even the smaller home. It permits installing air conditioning equipment on an installment basis. Ordinary heating radiators can even be replaced at later dates by unit conditioners. Cooling equipment can likewise be put in when funds become available.

Placing a unit conditioner in each room where conditioned air is desired makes possible independent control for each room without recourse to the other rooms. This is undoubtedly of more advantage in larger homes and somewhat less of an advantage in the smaller home. With the fan which produces the air motion located at the point of delivery right in the room, there can be no decreased output from air friction in long ducts. Also, no loss of heating or cooling units can take place through the walls of the ducts to unexcavated spaces under the house as in a central fan job with long runs of ducts. Excessive wind pressure on one side of a building will not upset distribution as easily with room unit conditioners as with duct systems supplied from a central plant.

Even with room unit conditioners, the architect will be confronted with various and sundry questions. Shall the room units be provided with separate heating and cooling coils? Shall these coils be served by independent or common piping systems for both heating and cooling? Shall steam or hot water be piped to the units for heating, and if hot water is decided upon, shall refrigerated water for cooling be used? If the room units are equipped with separate heating and cooling coils, steam may readily be used for heating and the direct expansion of a refrigerant for cooling.

But such questions are not nearly so important for the architect in the preliminary planning of his building as the one vital question of starting out with a heating system which will tie in properly as a part of a complete air conditioning plant. After a correct initial start is made so that the heating system will successfully dovetail into the completed ensemble, then it behooves the architect to let the owner in on the mysteries of air conditioning. He should explain the five phases or functions of complete air conditioning, and aid the owner in selecting such additional phases beyond just heating alone as will best fit the owner's pocket-book.

Anchorage

More Concrete in Bay Bridge Center Pier Than in Empire State Building

INTERESTING secrets connected with the center anchorage, midway between San Francisco and Yerba Buena Island of the San Francisco-Oakland Bay Bridge, are revealed in the accompanying drawing by the Bridge Engineers.

The anchorage is 504 feet high from bedrock to highest point. The average depth of the concrete is 217.4 feet and at one spot the concrete seal goes as deep as 222.4 feet.

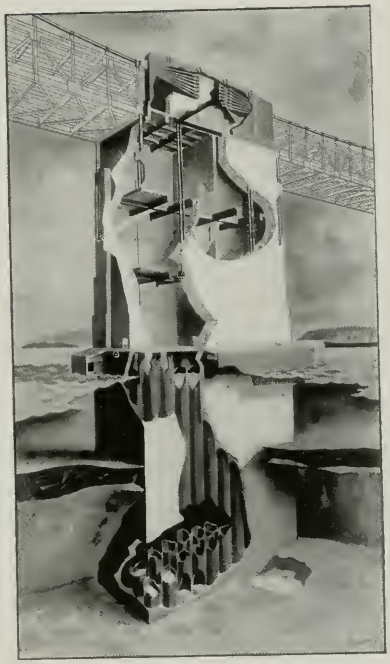
The pier below water is a concrete block honeycombed with 55 steel cylinders, each 15 feet in diameter. These cylinders are hollow and contain water save for 34 feet of concrete at the bottom of each. However, 3 cylinders at each corner of the pier or 12 in all are filled with concrete seal from bottom to top of the fender approximately 25 feet above water.

The walls of the anchorage above water are more than 14 feet thick and into these walls are anchored the steel "A" frames to which are tied the 38 eyebars connecting to the 37 strands of each cable.

The cables, comprising 17,464 wires, divided into 37 strands of 472 wires each, are 28¾ inches in diameter. Each cable splays out into 37 strands inside the anchorage and attaches to a set of eyebars.

These eyebars are pinned to a steel "A" frame imbedded in concrete.

The drawing shows the hoop-skirt fender design which surrounds the pier with a two-foot thick concrete skirt to minimize the injury to ships. The fender is fitted with timber to withstand the impact of small boats.



The highest elevation of the concrete center anchorage is 281.76 feet atop the steel hood. The lowest elevation of the anchorage is 222.4 feet, zero in each case being Standard Lower Low water which is a plane established by the United States Coast and Geodetic Survey.

The concrete center anchorage contains approximately 165,000 cubic yards of concrete and is said to represent more concrete than is contained in the Empire State Building, New York City.

South Tower

● *Twin to North Side Shaft of Golden Gate Bridge, Takes Definite Form*

A NEW and spectacular landmark has commenced to take form at San Francisco's harbor entrance. It is the south tower of the Golden Gate Bridge that, with its twin on the Marin side of the Golden Gate, will support the world's greatest suspension span.

Already the first sections of tower steel, some of the units of which weigh 70 tons, have been erected and approximately 1,500 tons of fabricated material are on the loading platform on the south pier fender in readiness to be erected.

In all, three barge loads of tower material have been delivered, and safely landed on the loading platform, despite high seas on the first day of delivery which rendered the handling of the heavy steel members somewhat difficult.

Pacific Bridge Company, builders of the difficult foundation for the huge tower, has completed dismantling its equipment and is moving from the site. In the meanwhile pylon S-2 to the rear of Fort Winfield Scott has reached an elevation of 95.2 feet on its west shafts, while forms and reinforcing steel, which will carry the east shaft to the same elevation, are in place. The pylon now tops the historic old fort and may be seen plainly by travelers on the bay ferries.

Advices from the eastern inspection bureau are that all of the material for the south tower has been rolled in the mills and is now in the shops in process of fabrication. Over 50 per cent of completed tower material is in storage at the contractor's Alameda yards or is in transit, while more than 50 per cent of the cable wire has been completed.

The first wire shipment reached here on the steamship Kentucky February 8. This is a test shipment, consisting of 152 coils with a total weight of 59,062 pounds.

According to the chief engineer's report a total of 900 men are now regularly employed on the bridge project in the San Francisco bay area and this number will be substantially increased as work on the tower progresses.

« « « « With the Architects » » » »

HONOR AWARD EXHIBITION

The Northern California Chapter, A.I.A., has named a committee to take charge of an Honor Award Exhibition early in May. This committee is composed of J. K. Ballantine, chairman; Gardner N. Dailey, Frederick H. Reimers, W. R. Yelland, Wm. W. Wurster, Chas. F. Maury, L. B. Miller, A. McD. McSweeney and Raymond W. Jeans. This committee will have charge of the collection of photographs and drawings to be exhibited at a location to be named later. The exhibit will be open to the public and is expected to arouse considerable interest in the better work local architects and builders have done in the last two years. A jury of architects will be named to award the honor medals.

RETURNS FROM EUROPE

Raymond W. Jeans, architect and assistant professor of architecture at the University of California, has recently returned from abroad where he devoted some time to study of the modern as well as the older architecture of Northern Europe. Mr. Jeans thinks this country is making better progress in well thought out modern design than many of the European countries. There is a tendency, he says, to build cheaply in some of the foreign cities.

OCCUPY NEW OFFICES

Paul L. Dragon and C. R. Schmidts, architects, have moved from Telegraph Avenue to the Whitecotton Building, Allston Way, Berkeley, which is a more central location for their increasing business. The firm has just finished plans for a two-story office building and women's club house in Sacramento which will be one of the first structures in that city to be supplied throughout with a modern air conditioning equipment.

RE-ELECT OFFICERS

All officers of the Associated Architects of Santa Barbara were re-elected at the annual meeting of the Association January 14. L. A. Cooke is president; E. Keith Lockard, vice-president; Winsor Soule, treasurer; and John F. Murphy, secretary.

SKETCH COMPETITION

Entries in the summer sketching competition sponsored by the Washington State Chapter, A. I. A., closed February 18, George Gove subcommittee chairman in charge. The formal judging of the sketches will be held at an exhibition early in March at the Seattle Art Museum.

Silas E. Nelsen of Tacoma was recently named joint chairman for the Tacoma Chamber of Commerce and the Tacoma Yacht Club to take part in handling the 1935 edition of the International Capital to Capital cruise to be held next July. This year the race will start at Tacoma in American waters and close at Nanaimo, B. C., in Canadian waters. While Architect Nelsen is on this job he is supposed to be saluted as "Commodore."

GRANTED CERTIFICATES

Certificates to practice architecture in the State of Washington have recently been issued to Irvin E. Muri, 4305 North Mullen Street, Tacoma; William H. Young, 715 Hoge Building, Seattle; Donald W. Henderson, 1603 Ruby Street, Pullman, and Tennys Francis Bellamy, 7411 Bagley Avenue, Seattle. The announcement was made by Harry C. Huse, director of the Washington state department of licenses, Olympia. The examining board consisted of Robert F. McClelland of Seattle, Nelson J. Morrison of Tacoma, and George M. Rasque of Spokane.

SCHOOL BONDS VOTED

City of Pittsburgh has voted approximately $80,000 for reconditioning the Junior High and primary school buildings in Pittsburgh, and the Federal Government will make an SERA allotment of an additional $29,000 for the proposed improvements. Louis S. Stone is the architect and H. J. Brunnier, engineer.

MAYBECK HONORED

Bernard R. Maybeck, venerable San Francisco architect, has been named a member of the executive committee of the Yerba Buena Exposition Association which organization is to sponsor the Yerba Buena Shoals as the site for the proposed 1938 Bridge Exposition.

PERSONAL

EDWIN J. IVEY, INC., have offices for the practice of architecture at 1416 Olive Way, Seattle. The incorporators are Edward J. Ivey, Mildred Ivey and Elizabeth Ayers.

DONALD D. WILLIAMS, recent graduate from the Department of Architecture, University of Washington, has opened an office for general practice at 4738 University Way, Seattle.

MILTON J. BLACK has moved his office from the Hollywood Security Building to 5369 Wilshire Boulevard, Los Angeles.

LOUIS N. CRAWFORD, architect of Santa Maria, was a recent San Francisco visitor.

C. H. HOWELL, civil engineer of Albuquerque, New Mexico, has been appointed chief engineer of the Los Angeles County Flood Control District in place of Samuel M. Fisher, acting chief engineer, resigned.

AFRED JONES, who received the highest rating in recent civil service test for the position of county surveyor, was permanently appointed to that post by the Los Angeles county supervisors to succeed John E. Rockhold, resigned.

PROF. B. A. ETCHEVERRY of Berkeley, has been appointed consulting engineer for Orange county on its flood control and water conservation project, succeeding the late G. A. Elliott of San Francisco.

EDWARD H. HARNETT, city engineer and director of public service of Long Beach, died suddenly January 19 at his home, 730 Sunrise Boulevard, in Long Beach, aged 46 years.

J. A. LARRALDE, architect, has moved from 3839 Wilshire Boulevard, Los Angeles, to 2231 Wilmar Ave., Alhambra.

BERKELEY SCHOOL WORK

Berkeley Board of Education has appointed an architectural commission to prepare plans for rehabilitating the city's school buildings and to bring them up to the requirements of the new state earthquake law. This commission has established offices in the High School gymnasium building, Berkeley, where drawings will be made. The members of the staff include Eldridge T. Spencer, W. C. Ambrose and Henry Howard. A separate commission for the Longfellow School building has been given to John Reid, Jr., architect, of San Francisco.

OAKMORE ESTATE HOMES

There is considerable home building activity in the Oakmore Estate Tract in Oakland, a number of East Bay architects reporting plans under way for houses in this new residential section. Miller & Warnecke have made plans for a $12,000 home for J. Val Strough, manager of the Oakland Chevrolet Motor Company; also a house for A. Zampa, proprietor of the Golden State Salami Company. In the same locality, B. Celli will build a $6500 house from plans by Ray F. Keefer. In Oakmore Highlands, Charles Ungaretti will build an eight room speculative dwelling, also from plans by Mr. Keefer.

REDWOOD CITY SCHOOLS

A report will shortly be submitted to the trustees of the Sequoia Union High School District recommending structural and other changes to a group of eight buildings, comprising the Sequoia High School plant at Redwood City. Survey and estimates are being prepared by H. J. Brunnier, structural engineer, Sharon Building, San Francisco. The report of Mr. Brunnier will be used as a basis for a proposed bond election.

BERKELEY RESIDENCE

One of the first twenty-year loans to be made in Berkeley, under the Federal Housing Act was announced early in February by the Center Street Branch of the Bank of America. The loan was made to Warren A. Hanna, attorney for the California Industrial Accident Commission, on a new home which he will build in Berkeley from plans by Fred L. Confer. Cost of the house will be approximately $6500.

HALL OF RECORDS

Fresno county supervisors have adopted plans for the new hall of records to be erected in Fresno. The plans have been forwarded to the Public Works Administration for approval, after which a call for bids will be issued. The building will be a three-story, reinforced concrete structure, containing two elevators, steam heating plant and sprinkler system. Cost is estimated at $350,000. Plans were prepared by the Allied Architects, 304 Rowell Building, Fresno.

AS OTHERS SEE US

[From Pencil Points]

The ARCHITECT AND ENGINEER continues its publication of the Historic Buildings Survey, this time with a number of the old Missions that never cease to make one marvel at what those old priests managed to do with the unskilled hands of their Indian converts.

In this number too, October, is a roof house (penthouse we should call it in New York) by Mr. O. A. Deichmann, very successful, judging from the illustrations. We reproduce one view of it here. A curious feature of the ensemble is a twelve-foot fire wall around the garden, which apparently could not be pierced on account of the fire hazard, and shuts off the view very effectually. So Mr. John Stoll was called in to paint "San Francisco Bay scenes" upon the wall to carry the eye beyond the enclosure; an actual rustic fence of redwood helps to create the illusion of reality.

REMODEL Y.M.C.A.

Robert H. Orr, 1300 Corporation Building, Los Angeles, is preparing sketches on which to base cost estimates of proposed alterations to the Y.M.C.A. Building at 715 S. Hope Street, Los Angeles. While it has not been determined how extensive the improvements will be, between $50,000 and $75,000 would be required for the changes tentatively outlined.

PIEDMONT PINES HOME

Working drawings are being completed in the office of F. Eugene Barton, Crocker Building, San Francisco, for a $20,000 Spanish style residence in Piedmont Pines, Oakland, Alameda County. The house will have twelve rooms, four baths, two-car garage, tile roof, oak plank floors, landscaping, etc. Contracts are expected to be awarded shortly.

HEALDSBURG SCHOOL

John I. Easterly, 302 Grant Street, Healdsburg, has completed plans for a one-story frame and stucco grammar school building at Healdsburg. The $75,000 structure will contain thirteen classrooms and an auditorium with seating capacity of six hundred. As soon as plans have been approved by the State Engineering Department, bids will be called for.

FEDERAL BUILDING ARCHITECTURE

A program of co-operation with the Government to attain "the highest type of architecture" in public buildings to be erected throughout the country has been adopted by the American Institute of Architects, it is announced by the president of the Institute, Ernest J. Russell of St. Louis.

Francis P. Sullivan of Washington, D. C., has been appointed chairman of the Institute's Committee on Public Works, which will direct the effort. Mr. Sullivan, who succeeds Louis La Beaume of St. Louis, has been serving as chairman of the Institute's Committee on the National Capital and as a member of the Architects' Code Committee. He is a former president of the Institute's Washington Chapter.

"It is essential in the public interest that buildings erected for the purposes of the Government be architecturally of the highest quality in plan and design so that the public service may be performed with the utmost efficiency and economy, and so that the citizens of the communities in which the buildings are located may take pride in them as symbols of the Government which they support," it was declared in resolutions adopted by the Institute's Executive Committee.

"The Public Works Committee is authorized to establish by conference and co-operation with the Government agencies controlling the design and costruction of Government buildings, and with other organizations having like objectives, methods by which these agencies may secure the highest type of architectural service for their purposes and the most satisfactory results in the finished structure, and to initiate such legislative changes as may be necessary to insure this end."

The sixty-seven Chapters of the Institute located in all parts of the country will work with the Committee in devising measures involving the practical, financial, and artistic aspects of public buildings activity, Mr. Russell said.

ADVERTISING AGENCY

Announcing a change in name, and entrance of Jas. C. Knollin into the firm on an equal partnership basis, Edwin P. Gerth & Co., San Francisco advertising agency, became the Gerth-Knollin Advertising Agency on January 1. Offices have been moved from the twelfth to the tenth floor of the Russ Building, where larger space has been taken. Mr. Knollin was recently vice-president of Bowman - Deute - Cummings, Inc. Previously, he was for a number of years an executive of the Hamman-Lesan Company.

BRIDGE DESIGN COMPETITION

As a continuation of its program of encouraging improvement in the aesthetics of steel bridge design, the American Institute of Steel Construction announces its Seventh Annual Bridge Design Competition, open to bona fide registered students of structural engineering and architecture in recognized technical schools of the United States. Two cash prizes of $100 and $50 respectively for the designs placed first and second, are offered. Certificates, signed by the Jury of Award and the officers of the Institute, will be awarded to those whose designs are given honorable mention.

The subject of the competitive design is a steel grade crossing elimination bridge.

The bridge carries a highway in a straight line over and beyond a railroad and another highway parallel to the railroad. The railroad tracks are at a right angle to the longitudinal axis of the bridge.

Suitable connections for two-lane traffic must be provided between the highways that cross each other. It is to be assumed that two parcels of land have been acquired for the purpose of these connections, each 200 ft. by 200 ft. There must be no crossing of lines of traffic where such traffic enters or leaves the bridge at the upper through highway.

The railroad right of way is 60 ft. wide, as is also the right of way of the parallel highway. The right of way for the upper highway is 100 ft. wide.

A center pier may be located at the dividing line between the railroad and highway, if it is desired to develop a two-span layout. Such a pier must not be wider than four feet nor extend more than four feet above the ground.

The terrain is flat and the maximum permissible grades on the approaches and highway connections are 5%.

The width between curbs on the bridge is 32 ft., providing for three lanes of traffic. As the structure is located in the open country there is to be no provision for sidewalks, or for lighting.

The elevation of the railroad rails is the same as for the crown of the parallel highway, and the minimum vertical clearance from the top of rail to the underside of bridge is 22 ft. Full minimum vertical clearance must be provided for a width of 45 ft. horizontally over the middle portions of the railroad and the highway crossed by the bridge. Thus, if a two-span layout is desired the vertical clearance of 22 ft. need not be maintained within 7 ft. 6 in. of the abutments or within 7 ft. 6 in. of the center line of the pier; or, if a single-span layout is used, the full minimum vertical clearance need not be maintained within 7 ft. 6 in. of the abutments.

All drawings must be line drawings in black ink only. The use of color is prohibited but shadows may be indicated in black ink or a monotone wash.

REQUIRED FOR THE PRELIMINARY DRAWING

A side elevation of the main span only at a scale of 1/16 in. to the foot.

A general side elevation and a plan at a scale of 1/64 in. to the foot. Only enough of the approaches will be required in this elevation and plan to show the connections between the highways and about forty feet beyond the abutment at the other end.

A cross section of the main span at a scale of 1/8 in. to the foot.

Elevations and sections must be clearly shown for the purpose of comparison.

Attention of the student is called to the fact that all preliminary drawings rendered in such a manner as to obscure the legibility of elevation, plan or section are subject to disqualification.

Drawings are to be presented on drawing paper size 18 in. x 24 in. which shall include a half inch white margin on all sides.

The preliminary drawing shall have in ink in prnted letters on a light background in the lower right hand corner the name of the student and his school; also the subject of the competition; the space used for this purpose must not exceed 2 in. x 6 in. The seal of the school may be used if included within these dimensions but no other writing will be permitted.

A copy of the preliminary drawing must be retained by each competitor.

REQUIRED FOR THE FINAL DRAWING

A plan, including enough of the approaches to show the connections between the two highways and about forty feet beyond the abutment at the other end, all at a scale of 1/64 in. to the foot.

A cross-section of the main span at a scale of 1/4 in. to the foot.

A quarter view perspective of the bridge only.

Attention of the students is called to the fact that all final drawings rendered in such a manner as to obscure the legibility of plan, elevation or section are subject to disqualification.

Drawings must be presented on unmounted drawing paper not to exceed size 24 in. x 30 in. which shall include a half inch white margin on all sides.

The supervisors of the competitors are required to forward all preliminary drawings to the office of the Institute following the exercise. A list of the competitors alphabetically arranged, headed by subject of program, should be enclosed with each shipment of drawings.

Final drawings will be disqualified for departure from the preliminary drawings in the development of the study and for insufficiency of indication.

The final drawing is to have in ink in printed letters on a light background in the lower right hand corner the name of the student and his school; also the subject of the competition; the space used for this purpose must not exceed 2 in. x 6 in. The seal of the school may be used if included within this space, but no other writing will be permitted.

The final drawing is to be submitted unmounted with borders already drawn.

Preliminary drawings must be received at the executive offices of the American Institute of Steel Construction, 200 Madison Avenue, New York City, not later than March 16, 1935, and final drawings not later than April 27, 1935.

JOINS ADVERTISING AGENCY

James R. Ferguson, who has been handling the technical news service for the Pacific Gas Association for several years, has joined the advertising agency of Gerth, Knollin, Russ Building, San Francisco. Mr. Ferguson will continue his work for the Pacific Gas Association in addition to his new duties for the Gerth, Knollin Advertising Agency.

SAN BRUNO MORTUARY

Thomas M. Edwards, architect, 9 Geary Street, San Francisco, has let a contract for a two-story frame and stucco mortuary in San Bruno for S. Nieri & Company. Building will cost $10,000.

A new mortuary will also be built at Auburn from plans by W. R. Yelland, of Oakland. The owner is Colin Hislop.

SANTA ROSA OFFICE BUILDING

Plans have been completed by Herbert & Caulkins, Rosenberg Building, Santa Rosa, for a one-story Class C office building to be erected on Fifth Street, that city, as executive offices for the Farmers Mutual Insurance Company. The building will be 60x138' and will cost $20,000.

TRULY, A BRIDGE EXPOSITION

One of the sites suggested for the proposed Bridge Exposition in San Francisco is at South Basin. It is sponsored by the South Basin World's Fair Association, a federation of civic and improvement clubs in the Bay City.

Plans for the proposed South Basin Exposition have been drawn by Richard J. Neutra of Los Angeles, and Otto Winkler, Associate, and they have procured a copyright.

Quoting from an announcement sent out over the name of the sponsors:

"South Basin has been recognized as the most meritorious site for the coming World Exposition in which primarily the city of San Francisco is interested. Briefly enumerated, the items in favor of it are: A more protected and dryer climate and thus a greater number of fine visiting days and evenings. Short and easy communications with the center of population and the center of hostelry and lodging accommodations for transients. An immediate and psychological attachment to the bay over which the celebrated bridges span. Both the bay and the bridges will be visible in a broad panoramic view from the two elevations, Hunters Point and Candlestick Point, which, together with the calm waters of the bay, will lend the Exposition an unprecedented charm. This charm means also economy because the grandeur of the spot will do away with the necessity of too costly monumentalism and of artificially producing towering elevations."

Describing the layout of the exposition, the circular reads:

"Bridges, unprecedented modern bridges, are the cause and the beginning of a new era for a greater San Francisco. The idea of the bridge has been made the leading motive, the central issue, the principle of layout in our project.

"When the visitor passes the main gate he finds himself in front of a bridge of light and color linking the two natural hills situated there to the right and left, flanking the main axis of the exposition—the Grand Canal. This waterway radiates from South Basin and is an essential of the post-fair development, which undoubtedly will thrive at this spot.

"The hill to the right is the Hill of Sunset or Occident, the hill to the left that of Sunrise or Orient. The water of the canal lies between them like the waters of the Pacific, and San Francisco bridges them and ties them together in cosmopolitan harmony like the lofty Bridge of Light, which the visitor faces as his first impression of the meaningful show.

"Under this symbol: 'San Francisco, the bridge and link between East and West' stretches the canal toward the bay and it is adorned by an array of smaller bridges leading from bank to bank, an exhibition of the bridge idea from man's early days to this year. There are old Roman, Moorish, Chinese, Medieval bridges, the famous Rialto of the ancient seaport of Venice, modern bridges in concrete and steel.

"Each bridge has on one bank an exhibition pavilion showing in a concentrated way the theoretical, spiritual, abstract thought of its period; on the other bank, however, the practical concrete achievements, the crafts, industrial production, the style of living known and influential at that time.

"These bridges lead all and in every case from the primary concept to the final accomplishment. On one bank are found the exhibitions of pure thought, the sciences, mathematics, physics, biology, philosophy, religion. The other bank represents the realm of production, the arts and crafts, the industrial output, the methods of producing the miracles of technology.

"Motor boats and water busses will travel on the canal and under the bridgelettes. Visitors will board them at the Embarcadero on Pacific Plaza, the grand Court of Honor of the Nations, and travel the waterway to receive an exquisite view of the fair, of the naval and marine exhibitions and finally speed out into the Bay, where the pictures of the great bridges will unroll themselves and will be explained to them by lecturing guides.

"The novelty of an exhibition of historical and modern bridges enjoyed from water-faring vehicles will be a central attraction in daylight, but night illumination will make it a gorgeous and unique show to be the backbone of the entire layout.

"The above-mentioned Pacific Plaza, with the Embarcadero and the canal ending in the center, is flanked by the oriental and the occidental exposition palaces, behind which even modest structures will build up to imposing height as the two natural hills are being utilized. The Hill of the Occident will have a Romanic, a Nordic and a Slavic Slope harmonized by proper landscaping. The Hill of the Orient is given to the nations of the Far East, of Southern Asia, the Levant, etc. The individual indoor exhibits of the nations will be placed in structures surrounding the foot of the two hills, which will be crowned by the towers of the Bridge of Light, or Rainbow Bridge of Peace, with a distance visibility reaching far beyond Bay Shore Drive."

EXPOSITION BUILDING

A bill has been submitted to Congress, carrying an appropriation of $350,000 for participation of the Federal government in the California Pacific International Exposition to be held in San Diego this year. Of the sum requested, $125,000 would be used for the construction of a building.

Chapter and Club Meetings

SOUTHERN CALIFORNIA CHAPTER

Winners for the design of the proposed Federal Housing Exposition building in Los Angeles were announced at the annual meeting of Southern California Chapter, American Institute of Architects, January 8. The announcement, made by Samuel E. Lunden, chairman of the Federal Housing Exposition Committee of the new and better housing program for Los Angeles, revealed that Plummer, Wurdeman & Becket were awarded first prize. Second prize was awarded to Sumner Spaulding and third prize to H. Roy Kelley, Erle F. Webster and Adrian J. Wilson, associates.

It is planned to have the building ready for occupancy in April. The most favorable site proposed to date is in the immediate vicinity of Wilshire Boulevard and Fairfax Avenue. Financing is to be handled by an underwriting group of the building trades, retail firms and banking institutions.

Six major objectives are listed in the prospectus of the exposition. They are:

1. To release millions of dollars into local trade channels through a revival of general building activity.

2. The creation of a great visual presentation augmenting the Federal government's housing program.

3. To stimulate a desire to build and modernize.

4. To demonstrate by example the construction and furnishing of new homes and the best of improved modernization and repair methods.

5. To demonstrate how funds may be secured for these purposes through the medium of banks and other lending agencies, who will maintain exhibits at the exposition and take applications for loans under the National Housing Act.

6. To afford an economical and practical visual method for the construction industries and allied businesses to present their products and services in an attractive, educational and entertaining manner to the largest number of individuals in the shortest possible period of time.

Chapter officers, elected at the December meeting, were introduced by Myron Hunt, who was chairman of the meeting.

Sumner Spaulding, re-elected president for 1935, submitted a frank report of last year's accomplishments and a definite outline of plans for the new year.

Proposed changes to the constitution and by-laws and other important matters that are to come up at the Institute convention in Milwaukee this year were explained by Edwin Bergstrom, national treasurer. Mr. Bergstrom also gave an interesting report on the public works program as it affects the architect.

A resolution was adopted reducing Chapter dues to $15 per year and the initiation fee for new members to $10.

Proposed amendments to Chapter by-laws, as approved by the executive committee, were read and discussed. The changes, all of which have to do with finances, will be voted on at the February meeting.

A report on the housing committee's activities was made by George Adams.

WASHINGTON STATE CHAPTER

Washington State Chapter, A. I. A., held its annual meeting January 19, at the Meany Hotel, Seattle. The 1935 officers are: President, Robert F. McClelland, Seattle; first vice-president, Lance E. Gowen, Seattle; second vice-president, Nelson J. Morrison, Tacoma; third vice-president, G. Albin Pehrson, Spokane; secretary, Arthur Hermann, Seattle; treasurer, Albert M. Allen: new members of the executive board, B. Marcus Priteca, Seattle, succeeding Arthur L. Loveless, Seattle. Reports of standing and special committees were submitted. Special attention is being given to the campaign to have public buildings designed by architects in private practice.

In the evening, the members with their wives and guests were entertained at a production of "Alien Corn" at the Studio Theater on East Forty-second Street, directed by Glenn Hughes. The entertainment arrangements were made by Donald Thomas.

TACOMA ARCHITECTS

The Tacoma Society of Architects, Nelson J. Morrison, president, is co-operating with the Federal Housing Committee headed by L. B. Coen, executive chairman. Stanley T. Shaw is chairman of an architect's committee to give technical advice on construction problems to prospective builders at the Tacoma FHA Office, Washington Building.

SPOKANE CHAPTER

F. E. Saunders of Gladding, McBean & Company, addressed a recent meeting of the Spokane Chapter, A. I. A., about the company's new vacuum process of clay manufacturing. Much interest was shown in his talk. Briefly, the clay is run through a vacuum which takes out the air pockets. A lighter yet very strong material results so that thinner slabs of terra cotta may be used. Neil Fosseen, sales manager, and E. L. Frank, treasurer for the Washington Brick, Lime and Sewer Pipe Company, were also represented at this meeting and displayed photographs of their new clay siding used for veneer work.

The Chapter held its annual election of officers February 1.

SAN DIEGO CHAPTER

At the regular January meeting of the San Diego Chapter of the American Institute of Architects, the following officers were elected for the current year: President, Wm. P. Lodge; Vice-President, Ray Alderson; Treasurer, Louis J. Gill; Secretary, John S. Siebert.

The Chapter has been active during the past year in several matters of great civic interest, outstanding among which has been directing the making of preliminary studies and estimates of cost for the proposed Civic Center buildings group on the water front.—J. S. S.

PLUMBING FIXTURES AT LOW EBB

It may not be generally known by those outside the trade, but it is a fact that plumbing fixtures today are selling for less than at any time in the last twenty years. This was disclosed in a survey recently completed by the Plumbing and Heating Industries Bureau at the request of the Federal Housing Administration.

Prices for boilers and radiators are approximately half of what they were in 1926, the survey reveals.

Adopting the 1926 price level as basic with the index number of 100, the bureau finds that the index number indicating relative prices for a five-foot corner built-in tub varies from 97.1 in 1914, 112.1 in 1920, 100 in 1926, 85 in 1928, 61.9 in 1932, 65 in 1933, to 55.1 in 1934.

A similar donward tendency is evident in the relative prices of kitchen sinks over a twenty year period, the bureau states.

The index number for a 20 by 52 inch roll rim, one piece sink which stood at 65.8 in 1914, advanced to 91.1 in 1920, and to 100 in 1926, and then declined to 93.2 in 1928, 71.5 in 1933, and today stands at 55.2.

Shipments of vitreous china plumbing fixtures reported to the United States Department of Commerce by 18 manufacturers for October, 1934, were 197,855 pieces as compared with 99,403 pieces in October, 1933, and 91,061 pieces in October, 1932. Examination of the reports for previous years indicates that shipments in October of this year were larger than those in 1930 and 1931 and only slightly under the shipments made in October, 1929.

The Bureau calls attention to the fact that besides the unprecedented low prices, the public buying plumbing today is getting the advantage of improvements in the performance of plumbing equipment, advances in design, superior durability and lower maintenance costs.

CLUBHOUSE AND POOL

A clubhouse and swimming pool is planned for McKinley Park, Sacramento, funds having been made available from a bequest by the late Mrs. Florence Cunie. Messrs. Starks & Flanders and Harry J. Devine, have been commissioned architects for the $150,000 project.

$8500 OAKLAND RESIDENCE

Chester H. Treichel has completed plans for an $8500 Spanish style house for John Peters. House will be located on Walnut Street in Oakland, and will have four bedrooms and three baths, steel sash, mahogany and pine trim and terra cotta tile roof.

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Two Nationally Known Trademarks Join in —

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FACTORY ASSEMBLED ▾ PRECISION FITTED
Automatic AWNING TYPE Windows

• Provide controlled illumination and draftless all-weather ventilation for schools and commercial buildings. • Made in one, two, and three-sash units. Multiple-sash units fully automatic . . . all vents operated collectively by motion of the lower sash. • Lower sash disconnects for independent operation; reconnects without use of manually operated clutches.

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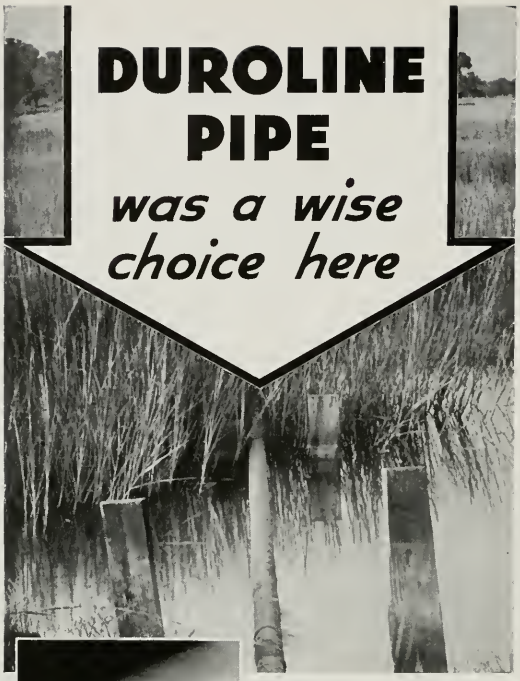

When a hot salt-water swimming pool was constructed recently in a southern residence, a problem which immediately confronted the engineers was the choice of material for service piping. They realized the destructive effect that hot salt water has on pipe metal. Duroline Pipe was investigated for the purpose, and very evident advantages led to the use of it in this difficult case.

Duroline is a highly protective cement lining, scientifically developed to check the destructive action of waters that rust, corrode or otherwise attack exposed pipe metal. Duroline Pipe offers the desirable features of the highest quality steel pipe, plus a new defense against corrosion and tuberculation, and the price is only slightly higher than galvanized pipe. A bulletin describes in detail the development and advantages of Duroline. Write for it!

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United States Steel Corporation Subsidiary

BOULDER DAM RESERVOIR STORAGE BEGUN

On the first day of this month the steel bulkhead at the upstream end of diversion tunnel No. 4 at Boulder Dam, through which the entire flow of the Colorado river is now by-passed, was closed and storage of water in the great reservoir was begun. More than half of the present flow will continue through diversion tunnel No. 1, which cannot be permanently closed until water rises in the reservoir to the base of the intake towers on the upstream side of the dam.

Four 50-ft. diameter diversion tunnels, two on each side of the river, were constructed. Tunnels No. 2 and No. 3 have been closed by concrete plugs. Tunnels No. 1 and No. 3 below the dam will be utilized for spillway tunnels.

The base of the intake towers, of which there are two on each side of the river, is 388 ft. above the lowest point of the foundation of the dam. They rest on the slope of the canyon walls and rise to a height of 380 ft. to the gate house. The towers are each 82 ft. outside diameter at the base and taper to 64 ft. at the top. The inside diameter is 32 ft. and two cylinder gates, one at the base and another 150 ft. above are provided. About 4,000,000 acre ft. of water must be stored to bring the water up to the intake towers and permit the closing of the No. 1 tunnel.

PROGRESS OF HOUSING CAMPAIGN

The Better Housing Program of the Federal Housing Administration began the new year by passing the two hundred million mark in the value of modernization and repair work created by the program. More than thirty million dollars has been loaned by private concerns for this purpose; and hundreds of thousands of enthusiastic reports of increased business and employment have been received by Federal Housing Administration headquarters. The program started six months ago.

It is conservatively estimated that a total of $211,847,655 worth of repairs and modernization has been stimulated by the Better Housing Program from the beginning of the drive last August to January 5. This is an increase of $13,854,771 over the preceding week's estimate. Much of this amount represents cash work, as the total amount of loans reported to January 5 was $31,526,547, or an increase of $1,407,643 for the week ending on that date. 75,113 loans had been reported to January 5, making the week's increase 3,214. Financial organizations continue to obtain contracts entitling them to lend under the Modernization Credit Plan. 65 obtained contracts during the week ending January 5, bringing the total number to 11,997.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Owing to the various crafts accepting the NRA code of fair competition, in some cases they have adopted a schedule of prices, and it therefore would be advisable to get in touch with these firms direct.
Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $35 to $40 per 1000 laid, (according to class of work).
Face, $75 to $90 per 1000 laid, according to class of work).
Brick Steps, using pressed brick, $1.10 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.75 sq. ft.
Common, f. o. b. cars, $15.00 job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126..00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots).

8x12x5½	$ 94.50
6x12x5 ½	73.50

Discount 5%.

Composition Floors — 18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month. following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.
Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b.) Job. S.F.) $2.90 per bbl.
Cement (f.o.b. Job, Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Medusa "White" .....$ 8.50 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place, exclusive of forms, 30c per cu. ft.
4-inch concrete basement floor.....12½c to 14c per sq. ft.
4½ inch Concrete Basement floor .....14½c to 16c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Meduca Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs. $75.00 per balcony, average.

Glass (consult with manufacturers)—
Double strength window glass. 15c per square foot.
Quartz Lite. 50c per square foot.
Plate 75c per square foot.
Art. $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.
Note—Add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron. etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$35.00 per M
No. 2 common	28.00 per M
Selected O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	48.00 per M
1x4 No. 3 flooring VG	42.00 per M
1x6 No. 2 flooring VG	48.00 per M
1¼x4 and 6, No. 2 flooring	52.00 per M

Slash grain—

1x4 No. 2 flooring	$39.00 per M
1x4 No. 3 flooring	34.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ 1.00 per bdle.
Redwood, No. 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.		
1 1-16x2¼" T & G Maple	132.00 M ft.		
⅞x3½ sq. edge Maple	140.00 M ft.		
	13-16x2¼" T&G	⅝x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—
O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel. 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel. 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.
Dining room cases, $7.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.
For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—
Two-coat work ..... 29c per yard
Three-coat work .....40c per yard
Cold Water Painting .....10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. keg s,net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00	lineal foot
8-inch	1.50	lineal foot
10-inch	1.75	lineal foot
12-inch	2.00	lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish No. 18 gauge wire mesh	1.50
3 coats Medusa finish No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
⅜-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale ..... $1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—
From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—
Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—
Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural
$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—
$85.00 per ton, set, (average).

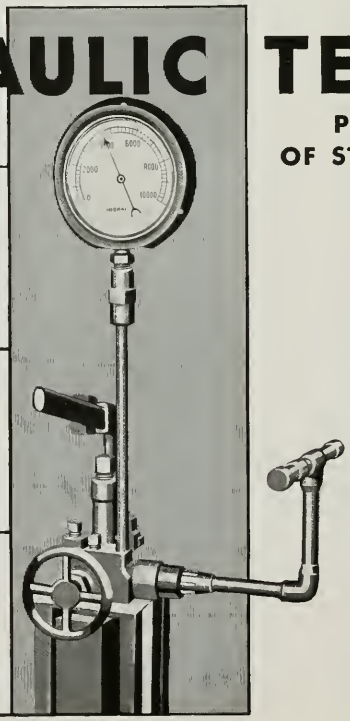
Stone—
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile — Floor, Wainscot, Etc. — (See Dealers).

HYDRAULIC TESTS

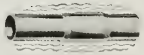
PROVE STRENGTH OF STREAMLINE FITTINGS



Rust-Proof

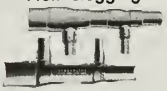
Absolutely rust-proof—will outlast the building in which it is installed.

Vibration-Proof



Vibration is not localized at the joints but harmlessly dissipated over the entire system.

Non-Clogging

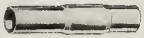


The interior is exceptionally smooth—no clogging.

Olsen Pulling Test

¾ in. Extra-Heavy Copper Pipe fails at approximately 9500 lbs. in the Olsen pulling machine—the joint itself never breaks.

Beauty of Design



STREAMLINE Fittings insure a joint actually stronger, though very little larger in diameter than the pipes which they connect.

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Note space saving qualities—no room required for wrench handling.

Here is a section of STREAMLINE fittings and standard STREAMLINE copper pipe (Type M) containing ten soldered joints. The hydraulic pressure pump test invariably shows that it requires 4000 lbs. or over internal pressure to fracture the pipe, but the joint itself is never damaged in the slightest degree—in other words the joint itself is stronger than the pipe.

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BOOK REVIEWS

By Edgar N Kierulff

ROBERT MILLS, ARCHITECT OF THE WASHINGTON MONUMENT: By H. M. Pierce Gallagher; Columbia University Press, New York. Price: $4.50.

One of the most entertaining books that has come to the writer's attention in some time. It is the story of a forgotten architect, who not only designed the great memorial shaft, but was responsible for the designs of the old Treasury, Post Office and Patent Office buildings in Washington.

The book is extremely well illustrated, and the plates are clear and well executed. Drawings from the pen of Robert Mills are also included. Fiske Kimball has written the Foreword.

To the American architect, this book, detailing the life and work of a remarkable character, and an architect but little revered today, should be of exceptional interest.

* * *

MODEL LAWS FOR PLANNING CITIES, COUNTIES, AND STATES: (Harvard Planning Series #7.) By Edward M. Bassett, Frank B. Williams, Alfred Bettman, and Robert Whitten; Harvard University Press, Cambridge, Mass. Price $2.50.

The Seventh volume of the Harvard Planning Series, and an able addition to a long list of books covering this all-important subject. This particular volume includes zoning, subdivision regulation and the protection of official maps.

The book is in the nature of a report by its authors. It is not illustrated.

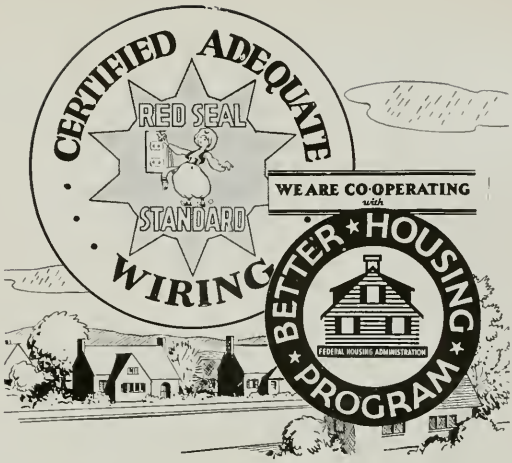
* * *

ARCHITECTS' SPECIFICATIONS — How To Write Them; By Goldwin Goldsmith, Fellow A.I.A., John Wiley & Sons, Inc., New York. Price $2.50.

This volume would appear to fill a want among the members of the profession. It takes the reader systematically through the various steps and phases of Specification Writing, giving a full and comprehensive picture of an always difficult problem.

The author is thoroughly conversant with his subject and the reader will find many helpful suggestions in the book, with often neglected points thoroughly discussed.

The book should have a definite place in every architectural office where careful work and attention to detail is aspired to.



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Los Angeles

THE CHOICE OF ARCHITECTURE AS A CAREER

By Cyril Blacket in "Building," New South Wales

An inquiry from a fond father at Newcastle as to the wisdom of encouraging his son in selecting architecture for his career, has opened up many reminiscences by Cyril Blacket, who, having won two public competitions, and built two private homes before the beginning of "half a century ago," and has ever since been associated with architecture and its subsidiary branches in some shape or form, claims that he ought to know something about the subject.

Vitruvius wrote that "first of all an architect should know everything" which comprehensive phrase is explained by the fact that he should, by visiting a locality, know what timber was available on the spot, what clay for making bricks, shells or lime stone for burning into lime, stone for building, shingles for roof, etc. Also how to transport men and materials not locally available and how to instruct local labor as to the architect's methods.

This opens up a very wide sphere of study, and thereby fits the student for a great many other useful occupations, as to do these he must be able to draw, survey, write, photograph and keep accounts, and above all be able to organize. So important is this capacity for organization, that it really should be put first, as the lack of it in many architects has been the fruitful source of more or less serious failure.

At the present time about 730 persons are registered as architects in N.S.W. of whom about 600 are in the employ of the remaining 130, or are in official departments of the State or Municipal Governments. Of this balance of 130 about 90 per cent of all the architectural work is done by about 30 architects, whilst about 10 per cent of all the work is divided up amongst the remaining 100 architects.

As if this were not sufficiently complicated, when we look through the list of the architects who have been pre-eminent in Sydney, either by the excellence of their designs or by the extent of their business, we find that many were not in the beginning educated as architects, but seemed to have drifted in because of their capacity to organize. We recall the names of one who was a paperhanger, another a step ladder and digger's cradle maker, another a foreman on a railway construction contract, another a stone mason and so on. Even my own father, the late Architect Edmund T. Blacket, was never in an architect's office till he started his own.

On the reverse side one of the most respected builders in Sydney served his apprenticeship as an

architect and several Municipal Council Clerks did the same.

It may be said that the same in one sense applies to law, medicine and engineering, as a career, but scarcely to the same extent.

From a remunerative point of view, my experience has been that architecture is violently variable, in fact, in one case £3000 was earned in one year, whilst in the succeeding one there was not enough to pay office expenses.

For a few years when a building boom is on, all architects are busy, and the promise of profit very delightful, but when, as at present, the boom subsides and little, if any, building is carried on, the architect feels this first and most severely, as though he has to keep up his office expenses for rent and staff, the new work coming in gets less and less, and worst of all so much of it is never paid for.

My own experience was that when closing my office, which compared with many was a very small affair, nearly £10,000 of bad debts was shown, out of which, as most was owing by churches, only about 2½ per cent altogether was collected.

Often an architect designs a large building to be built in sections, one or more only of which are ever built and paid for, although the architect bore the cost of preparing the whole design.

Another trouble is in public competitions, which theoretically will be more fairly conducted, if an independent arbitrator is the sole adjudicator instead of, as formerly the case, a general committee probably ignorant of architectural matters settling the selection by majority voting. Practice, however, has shown that most professional adjudicators have a mental kink in favor of some specialty, so that the cunning competitor after finding out who is adjudicator, plays up to his little fads in the hope of winning thereby.

To summarize the good and bad points on which a decision as to whether a young man should be advised to adopt architecture for his career, or to shun it, the good and bad points are: As a basis for education, it is full of interest because there is no limit to its branches, construction, art, design, profit, durability, speculation and others, and as such it is a great asset in the education of a builder, any building tradesman, an estate agent, a surveyor, an engineer, a council clerk, and many others, all of whom are better off for an architectural training.

As a remunerative calling, it is more or less variable, as in boom times there is a keen demand and in times of depression practically none. At best the rank and file do not receive as much remuneration as an average bricklayer, although they are under much more expense to keep appearances up to standard.

If, however, a young man feels sufficiently interested to take the risk, my advice is to go at it, as there are joys in an architectural career, and its side issues, which compensate for a lot.

A lawyer at best keeps a rogue out of jail or puts a good man in, to please his client. His work in such a case revolts him, and at best he has no monument of what he has done.

Every building an architect designs is his memorial. My father designed the Great Hall and the main building at Sydney University, so that he will never, never be forgotten. Such "may be" the good fortune of any young man who chooses architecture as his career, and this hope is a great reward in itself.

As side issues, travel and variety are great adjuncts. When a depression is in full swing is the time for a young man to begin study, as by the time his five years are over another boom is beginning to start to give him a welcome, and many of those now in the architectural world will have drifted off to other occupations, as five years building depression with scarcity of architectural occupation will have been more than he can stand. If the young man faces his career because he feels it is his calling, and has a capacity to organize, he should do well, but otherwise there is nothing much in it.

WINNERS OF MURAL COMPETITION

The move to provide employment for a number of deserving mural painters by introducing their work to a large group of smaller industrial organizations, heretofore interested in art from the standpoint of product design only, had a dramatic interlude December 17, at the Architectural League of New York Headquarters, 115 East 40th Street, Manhattan, when the prize winners in the nation-wide art in industry mural contest, lasting from October 15 to November 30, were announced.

First prize was awarded to Dunbar Beck of 140 East 39th Street, New York, and a Prix De Rome Scholarship winner, for his dramatic mural depicting history, manufacture and uses of labels. Mr. Beck receives $500 and a commission to decorate the new offices of the Ever Ready Label Corporation of 141 East 25th Street, Manhattan, with his prize winning mural. Cash prizes were awarded second prize winner Kenneth D. Loomis, third prize winner Charles Goeller and fourth prize winner Charles S. Dean.

FUNCTIONALISM AND INTERNATIONAL STYLE

One wonders if the architects of the future, seemingly helpless at present, will give the attention to functionalism that is truly its due in creative design. Functionalism as acted upon by its present practitioners with a few brilliant and glorious exceptions, has become a veritable dis-

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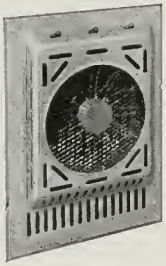

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ease. It has been taken to mean an end in itself. Functionalism is not an end, it is only one of the beginnings, the letter A of a great and eloquent alphabet of architectural expressions. At present if a designer has achieved thirty windows in a row, he is much superior to another who has only twenty-five windows in a row. It is to be hoped that some day these dry bones will arise, execute a dance macabre and disappear. Functionalism, expressed as it usually is, means really very little to the welfare of architecture, no more than does the work of the misguided and misled proponents of what they glibly call, as a slogan, doubtless, the International Style. If there is one thing we do not want, as self-respecting citizens of this assemblage of varied United States, it is an International Style. A real style, as rationally conceived, and arising in response to conditions of social, religious and economic life, is national or racial. It is also on account of a particular environment regional, local, communal and personal.

Doubtless the ponderously serious men who advocate an International Style would consider as valid, reasonable and progressive, an International Style in music, poetry, sculpture, literature, and painting. If for one art, why not for all?

The concept, what Functionalism really means, as one of the ways towards *rightness,* as Whitacker puts it so well in his new book, must be broadened, widened and integrated with out every activity. It is not a formula. It is an inspiration—fluent, plastic, and clothed in garments of romance.

There is enough for all to do, if the process ever gets started. Our office buildings may, in time, be not merely inarticulate and false to their structural systems, as most of them are now, but eloquent of function; our churches and libraries in their way, likewise; our functionalized houses not merely dehumanized glass enclosures, harshly and bitterly formed; our art museums not merely glorified machine shops or delighted exhibit spaces for the sale of perishable goods, and so on.

Let us forget ourselves, if we can, and commune with the ever present source of supply—the native content of the problems themselves. Perhaps in doing so even a modicum of poetry, of romance, the sense of high spirited endeavor, will disclose themselves in the things we do and we will come into our own. We seem to be on the way, or on some way, to that end. In the future, decorative architectural decorations or symbols will suggest themselves, inevitably, as in the past ages, and in the hands of capable men and women will enrich and dramatize in a lyrical manner the Fine Art of output of the nation.

GEORGE G. ELMSLIE,
in *Bulletin of*
Illinois Society of Architects.

LARGE SCALE PLANNING

Large scale planning is, just now, much in the public eye. To the layman the idea of a planned and controlled development of public and private properties as the necessary basis for better living comes as a fresh thought; but there is a small and devoted group to whom it is no new story. For a generation they have been working for and towards the ideas and ideals which are grouped together under various somewhat vague terms, such as "town planning", "city planning", "regional planning", "large scale planning", and so forth.

Through the generosity of the Carnegie Corporation of New York, the Board of Trustees of Cornell University has appointed as professor of Regional Planning, Gilmore D. Clarke of New York, a well-known consultant.

The conditions at Cornell seem unusually favorable for a strong development of large sash planning. In the nine Colleges at Cornell is to be found the diversely minded student body which is necessary for the successful conduct of this experiment and in the fully developed schools of Architecture, Landscape Architecture, and Engineering, is the needed technical background. The student body is a fairly large one; it includes those from urban, suburban, and rural communities and from widely spread political units. Cornell has already made notable contributions in the field of rural social organization and various members of the faculty are active in the work, led by Provost A. R. Mann, Chairman of the New York State Planning Board.

The new courses will be set up with the idea of appealing to students in every college in the University. They will be as non-technical as possible and are not designed for the development of experts. Rather they are intended to give a student whose main interest may be in Law, Medicine, Engineering, Architecture, Landscape Architecture, Agriculture, or what not, an opportunity to gain some understanding of a program that is daily becoming more important in its influence on modern life and thought. The introductory courses will be supplemented by advanced seminars and graduate work for those who want to continue. Through this supplementary work certain individuals will doubtless be drawn into the planning field as their main interest and will seek further and special training elsewhere.

The proposed courses are being sponsored jointly by the Colleges of Engineering and Architecture but neither college will schedule them as required work. Registration will be on a purely voluntary basis, and it is expected that the work will cut across college lines in all directions.

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"WHERE TO?"

Cecil E. Tanner
in Pencil Points

"Throughout the past five years of financial distress, the American architectural schools have been turning out graduates in the same, if not greater, numbers than during the preceding, so-called prosperous years. At the same time, there has been one of the greatest periods of depression that the building trades has ever experienced. This fact has made it impossible for the majority of these young graduates to obtain work within the profession which they have spent a great deal of time and money preparing themselves to enter. Due to their financial condition, they have been compelled to take any form of work that might present itself. Many of these jobs have been so far removed from the cultural atmosphere with which tradition surrounds an architect and his work, that these young men, who had dreamed of being the Cass Gilberts and the Paul Crets of tomorrow, have lost sight of their visions.

"Some are spending all of their spare cash on architectural magazines and sketching materials. They read the magazines at night after their day's work is completed, and go on short sketching trips on the days they are not working. Many young men are unable to secure steady employment, and have been compelled to depend upon odd jobs for their livelihood; making it almost impossible for them to keep up with their reading and sketching. Others have worked for CWA and similar activities. A few of those who lived in the cities have had drafing work to do on some of the various relief programs. However, hundreds of these young architects live in towns too small to be affected by the government's interest in art and architecture. These unfortunate fellows have been working in restaurants, filling stations, grocery stores, and similar places. If they had relief work, they were

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out cleaning up vacant lots or tearing down abandoned buildings, which would have given them an excellent opportunity to study construction, had the buildings been newer and employed more of the recent developments in construction.

"Now there is a slight flurry in trade, and the newspapers tell us that building activities are increasing. We hope they are correct. Any increase in building will create openings for unemployed draftsmen. What about the young architect, who completed his education three or four years ago? Is he going to be given a position when work starts in the offices again? I doubt it. Not if the present tendency among other professions holds in architecture.

"The attitude of the employer today is to give the older man, who has had years of experience in that particular line of work, the first job that is open. You say there will not be enough such men to go around. Many of them have found permanent places in other fields; many have reached an age where they could no longer be of use in active business, while others have been removed by death. These vacancies will have to be filled by younger men, but they will not be filled with men who have been out of school two or more years. Our architectural schools will turn out as many, if not more, graduates this year than they have in the past. These young men will be given the preference over the fellows who finished in '30 or '31. They are younger; their minds are keener; their ideas are newer, and their knowledge more up to date. The majority of their time during the past four or five years has been spent sketching and drafting. These young men have also been taught the fundamentals of the new types of construction that have appeared in the past few years. While production has been slow, the manufacturers have turned their efforts toward developing new materials, and new methods of using the old products.

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It has been impossible for the young man, who finished his education two or more years ago, to keep up with the activities and developments within the profession as he should, or as he would have had he been employed in an office.

"There are thousands of young men all over the United States who are faced with this problem. How are they going to compete with the older, experienced man, and with the younger man just out of college? They have been unable to get work in their chosen profession. They have made every effort possible to keep their minds from getting dull, while they were doing work that any man with a grammar school education could have done as well. Will some place appear to take care of these men within the profession, or are they to remain outside of the work they love, and continue being filling station attendants, hotel clerks and chain store salespeople? Once more I ask Where to?"

ROOF GARDENS

By Patrick Balfour, condensed by Real Estate and Building Management Digest from the September, 1934, issue of Town and Country.

Typical of many houses springing up in England today is that with flat roof and roof-garden, area for sun-bathing, pergola and covered shelter. It looks as if in another generation we shall be living on our roofs. This is new, indeed, for in England the roof-garden virtually has been unknown, our roofs so much waste space—soot covered. Roof development is made simpler by the fact that these modern houses are designed for the most part with central heating gas and electric fires. Coal grates seem to be things of the past. What a pity if we must lose the joy of a bright open log fire on autumn evenings, glowing and aromatic with odors inseparable of the English country house! No modern home is without its sun-parlor, "sun-trap" terrace, loggia for outdoor meals, and, where means allow, its swimming pool. Everything is designed so maxi-

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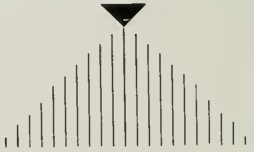
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mum time may be spent outdoors. Above all, we rejoice in view. Here we differ from the Elizabethans, who built always in a hollow and never looked out of windows. A striking new house in Buckinghamshire, with the very modern name of High-and-Over, is of brick and tile, with reinforced concrete, its lines merging with the lines of the surrounding chalk hills. Just as the Regency architects showed vertical lines of construction in exterior window openings, so High-and-Over emphasizes cantilever construction with horizontal windows. All face sunlight and view. The house is star-shaped, so every room has three outside walls, each pierced with windows. This is by far the most advanced essay in modern domestic architecture yet seen in England.

BUSINESS

The charge has been made against the Washington Administration that recovery had been retarded in order to advance certain social reform. Whether such a charge is true or not, certain thoughts arise in the minds of observers and, out of these thoughts, are heard the whispers of minority opinion, logical and otherwise. For the sake of presenting the views of certain business philosophers let us admit that certain social reforms are necessary and then ask ourselves how and by what means they are going to be attained if business and industry do not furnish the vital and life-giving employment and are enabled to earn a sufficient profit to maintain employment. From this bit of logic would it not seem plausible to advocate starting business rather than retarding it? Morale must be maintained in business as in everything else that requires devoted service, and while we admit that certain restrictions, regulations and supervision are neces-

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sary we must also claim that business cannot be harassed and taxation increased or be made to compete with the government in many fields.

The depression has proved that there are a great many things the public was spending money for that it did not require and could not afford. The thought occurs to us to ask what might happen if business decided to go on a strike, to shut up shop, to call in its salesmen and stop sales effort; to quit? Business gets blamed for about everything that happens or does not happen and it has as much right to demand its minimum wages as has its employees. It has the right to strike, only business isn't conducted by men who lack spirit, or who are subject to dejection or fits or morose hopelessness. Despite the increasing toll that is being exacted of it, business is ready with a little help from the government, to step on the accelerator and help turn a picture of stagnation and inactivity into a movie. Business wants to get going and once it gets into motion the social reforms will find business men active in their support. Business men will "sell" America on any proposition that is good for the country, because business likes to see activity and if certain social reform will solve the problem of inactivity business will be back of them.—Stone.

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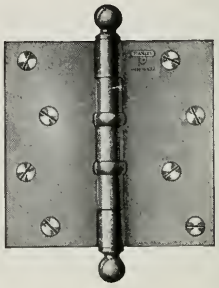

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Anderson & Ringrose, 320 Market Street, San Francisco — 72
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Monson Bros., 475 Sixth Street, San Francisco — 78
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University of California Press — 2
Libbey-Owens-Ford — 3
Pittsburgh Plate Glass Co. — 7
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Los Angeles, California

Page

W. S. Dickey Clay Mfg. Co., San Francisco and Oakland . . . 72

INSPECTION AND TESTS

Robert W. Hunt Co., 251 Kearny St., San Francisco . . . 74

LACQUERS

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle . . . 1
Bass-Heuter Paint Company, San Francisco, and all principal Coast cities . . . *
National Lead Co. of California, San Francisco, Los Angeles, Portland and Seattle. . . . *
W. P. Fuller & Co., 301 Mission Street, San Francisco. Branches and dealers throughout the West . . . 7

LIME

Boulder Canyon dolomitic hydrated lime, manufactured by United States Lime Products Corp., 85 Second Street, San Francisco; 1840 E. Twenty-fifth Street, Los Angeles . . . *

LINOLEUM

The Paraffine Companies, factory in Oakland; office, 475 Brannan Street, San Francisco 1
Sloan-Blabon linoleum, sold by California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco . . . 70

LUMBER

Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara . . . 73
Smith Lumber Company, Nineteenth Avenue and Estuary, Oakland . . . 73
Chas. R. McCormick Lumber Company, Portland; Sheldon Bldg., San Francisco; Los Angeles . . . 69
Melrose Lumber & Supply Co., Forty-sixth Avenue and E. Twelfth Street, Oakland . . . 72
E. K. Wood Lumber Company, 4701 Santa Fe Avenue, Los Angeles; 1 Drumm Street, San Francisco; Frederick and King Streets, Oakland . . . 6

MAIL CHUTES

Cutler Mail Chute Co., represented by Price Building Specialties Co., 683 Howard Street, San Francisco, and B. L. Wilcox Bldg. Specialties, 2071 Laura Avenue, Huntington Park, Los Angeles . . . *

MARBLE

American Marble Co., P. O. Box 578, South San Francisco . . . *
Joseph Musto Sons-Keenan Co., 535 N. Point Street, San Francisco . . . 72

MILLWORK

Melrose Lumber & Supply Company, Forty-sixth Avenue and E. Twelfth Street, Oakland 72
Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara . . . 73
Smith Lumber Company, Nineteenth Avenue and Estuary, Oakland . . . 73

MONEL METAL

"Inco" brand, distributed on the Pacific Coast by the Pacific Foundry Company, Harrison and Eighteenth Streets, San Francisco, and Eagle Brass Foundry, Seattle . . . 68

OIL BURNERS

S. T. Johnson Co., 585 Potrero Avenue, San Francisco; 940 Arlington Street, Oakland; 1729 Front Street, Sacramento, and 230 N. Sutter Street, Stockton . . . 6
Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland . . . 74

ONYX

Joseph Musto Sons-Keenan Co., 535 No. Point Street, San Francisco . . . 72

PAINTS, OIL, LEAD

W. P. Fuller & Co., 301 Mission Street, San Francisco. Branches and dealers throughout the West . . . 7
Bass-Heuter Paint Company, San Francisco, and all principal Coast cities . . . *
National Lead Co. of California, San Francisco, Los Angeles, Portland and Seattle. . . . *

PAINTING, DECORATING, ETC.

The Tormey Co., 563 Fulton Street, San Francisco . . . 74

PARTITIONS—MOVABLE OFFICE

Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; factory at Santa Clara . . . 73

PENCILS

Koh-I-Noor Pencil Co., Inc., 373 Fourth Avenue, New York City . . . *

PIPE-DUROLINE (cement lined)

National Duroline Pipe, manufactured by the National Tube Company, Frick Bldg., Pittsburgh, Pa. Pacific Coast Distributors: Columbia Steel Co., Russ Bldg., San Francisco . . . 64
Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City . . . 4

PIPE FITTINGS (Solder type—Streamline)

Mueller Brass Co., Norman S. Wright & Co., distributors; 41 Spear Street, San Francisco; 608 Pioneer Bldg., Seattle; 923 East Third Street, Los Angeles . . . 66

PLASTER

"Empire" and "Reno Hardware Plaster," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego . . . Third cover

Page

Boulder Canyon dolomitic hydrated lime, manufactured by United States Lime Products Corp., 85 Second St., San Francisco; 1840 E. Twenty-fifth St., Los Angeles. *

PLATE GLASS

Libbey-Owens-Ford Glass Co., Toledo, Ohio; 633 Rialto Bldg., San Francisco; 1212 Architects Bldg., Los Angeles; Mr. C. W. Holland, P. O. Box 3142, Seattle 3

PLUMBING FIXTURES

Mueller Co., Decatur, Ill.; San Francisco Branch, 1072 Howard Street 70

PLUMBING CONTRACTORS AND MATERIALS

Carl T. Doell Co., 467 Twenty-first Street, Oakland 73
Crane Co., all principal Coast cities 74

PRESSURE REGULATORS

Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland. 74

REINFORCING STEEL

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4

ROOF MATERIALS

"Malthoid" and "Durable," also "Pabco" 10 and 20-year roofs, manufactured by the Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle 1
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N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda . . . . . *

RUSTIC FENCING

California Rustic Fence Company, P. O. Box 122, Healdsburg, California. . . . . *

SAND, ROCK AND GRAVEL

John Cassaretto, Sixth and Channel Streets, San Francisco 78

SHADE CLOTH

California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70

SHEET METAL WORK

Forderer Cornice Works, Potrero Avenue, San Francisco 72
Guilfoy Cornice Works, 1234 Howard Street, San Francisco 73

STAINLESS STEEL PIPE AND TUBES

National Duroline Pipe, manufactured by the National Tube Company, Frick Bldg., Pittsburgh, Pa. Pacific Coast distributors: Columbia Steel Co., Russ Bldg., San Francisco 64

STEEL—STAINLESS

Republic Steel Corporation, Rialto Bldg., San Francisco; Edison Bldg., Los Angeles; Smith Tower, Seattle 73

STEEL SHEETS

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4

STEEL, STRUCTURAL

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4
Judson Pacific Company, C. F. Weber Bldg., Mission and Second Streets, San Francisco, shops, San Francisco and Oakland 70
Pacific Coast Steel Corporation, Twentieth and Illinois Streets, San Francisco; Slawson Avenue, Los Angeles; American Bank Bldg., Portland; West Andover Street, Seattle 78

STORE FRONTS

Kawneer Mfg. Co., Eighth and Dwight Streets, Berkeley 71

TEMPERATURE REGULATION

Johnson Service Company, Milwaukee, represented on the Pacific Coast by the following branch offices: 814 Rialto Bldg., San Francisco; 153 West Avenue, 34, Los Angeles; 1312 N. W. Raleigh Street, Portland, and 473 Colman Bldg., Seattle. . . . . *

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Chas. R. McCormick Lumber Co., San Francisco, Seattle, Los Angeles and San Diego. . 6
Reilly Tar & Chemical Corp., Indianapolis, Indiana; Architects' Bldg., Los Angeles; 461 Market Street, San Francisco 6
E. K. Wood Lumber Company, No. 1 Drumm Street, San Francisco; 4701 Santa Fe Ave., Los Angeles; Frederick and King Streets, Oakland 6
J. H. Baxter & Co., 333 Montgomery Street, San Francisco, and 601 W. Fifth Street, Los Angeles 71

WINDOWS

Dalmo-Pinecraft-Automatic swing-type windows, White Pine Sash Company, Spokane 63
Kawneer Mfg. Co., West Berkeley 71

WINDOW SHADES

California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70
Wm. Volker & Co., 631 Howard Street, San Francisco 73

Next Month

•

First Showing
of some of the
new buildings
being erected
at
San Diego
for the

1935 World's Fair

also

Santa Maria City Hall,
Louis N. Crawford,
Architect

* * *

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Notes and Comments

ARTHUR BROWN, JR., of San Francisco, is one of the nine architects in the United States invited to participate in a competition sponsored by the Federal Government for the selection of an architect for the proposed Federal Reserve Board Building in Washington. The building is to be erected on Constitution Avenue, adjacent to the National Academy of Sciences, designed by the late Bertram G. Goodhue.

The program, prepared by Dean Everett V. Meeks, of Yale University, School of Fine Arts, provides for a building of white marble, to conform to the material of its neighbors.

An interesting clause in the program states that "it is further suggested that the use of columns, pediments and other similar forms may be omitted and should be restricted to a minimum consistent with the character of the building, as described."

This would appear to indicate that the reign of the column and pediment is nearing its close, even in Washington.

The Jury of Award consists of Dean William Emerson of Boston, Messrs. John W. Cross and John Mead Howells of New York, Frederic A. Delano, Chairman of the National Capital Park and Planning Commission, and Adolph C. Miller, Member of the Federal Reserve Board, of Washington.

In addition to Mr. Brown the competitors selected are Messrs. Coolidge, Shipley, Bulfinch and Abbott of Boston, Paul Philippe Cret of Philadelphia, Delano and Aldrich, John Russell Pope, James Gamble Rogers, Egerton Swartout and York and Sawyer of New York, and Holabird and Root of Chicago.

* * *

THROUGHOUT the Pacific Northwest planning is being given legal status and broader scope through legislation. The Oregon Legislature has passed bills setting up a State Planning Board of nine members and has approved a two-year budget of $45,000 to carry on the activity of the Board. Other bills pending provide for zoning of forest lands, for the acquisition of forest lands by the Federal government, a group of six bills relating to ownership and transfer of county-owned lands to the state and Federal government, a bill for the consolidation of state departments, and several other important bills related to planning.

Washington is proposing legislation pertaining to exchange of tax reverted lands for other lands in the county, authorizing establishment of flood zones, providing for the establishment of flood control districts, regulation of platting and subdividing of lands, and for the establishment of county and city planning commissions.

In Montana, the Governor has recommended to the legislature the creation of a State Planning Board, relieving the Water Conservation (and planning) Board of the state planning function. This new board would be fully empowered to develop a comprehensive plan for the conservation and use of the natural resources of Montana and to make necessary economic and social surveys in connection therewith. It would be empowered to encourage the formation and activities of local planning boards throughout the state and to cooperate with them in the formation of a state plan. It would also be empowered to cooperate with planning bodies of adjoining states and regions and the nation in the formation of regional plans and policies.

General sentiment in the Montana Legislature is understood to indicate a recognition of the need for a state planning agency and it is believed the Act will have favorable consideration. The creation of such a Board will encourage the continuation of the district organization set up in Montana for planning. Under that method the state is divided into twelve districts, with a representative from each district who constitute a State Advisory Planning Council. Each District Advisor in turn has been responsible for the organization of local planning bodies in his district.

Idaho is considering legislation pertaining to all phases of planning, including establishment of a State Board, district, county, and city planning commissions, and to other land and water problems of the state.

* * *

THE matter of publicity for the architects bobs up again in a communication to *Pencil Points* by S. Elmer Chambers. He thinks the manufacturers of commodities that go into building construction too often overlook the architect in their advertising matter—especially in the popular magazines of national circulation. He argues that—It is through these mediums that John Public learns to know the merits of brass pipe, rolling window screens, so-an-so's paint, cement, and whatnot — and it is through these magazines that he can be taught to know what an architect is and does. To quote Mr. Chambers:

"Let's suppose the following incident to be typical throughout the country at large: A material representative calls upon an architect, who picks up copies of half a dozen popular periodicals in which the product under consideration is advertised. He invites the salesman to look over the ads with him in order to see just how far this manufacturer, who expects his material to be specified, is reciprocating. At the same time our friend the architect gently indicates that when the firm in question comes to see the value of this publicity to all concerned he will listen to its claims with considerably more interest and attention. He goes on to explain that this in no wise savors of a "racket," or if it is, it is a decidedly beneficial racket to all parties involved.

"Perhaps this idea is entirely and completely wet, but the fact remains that the most successful way we know of promoting general knowledge of a product, service, or anything else saleable is by spreading its merits over as many printed pages—in the hands of as many people—as possible. This the architects know must be done if real and effective publicity for the profession is to be had. Too many courageous but feeble schemes of ballyhoo bear witness to their ineffectiveness and the need for nationwide advertising—or education, if you prefer."

* * *

BUILDING revival is getting under way. There can be no doubt about it. Improvement is particularly noticeable in residence work. Permits for new homes in all California cities have shown an appreciable increase the past month. The cost of these houses varies from $5,000 to $30,000. The money is not all coming from loans made possible under the Federal Housing Act. Owners are investing their savings—a sign of a return to confidence. While there is some activity in home building of the more pretentious type, the preponderance of present construction is small homes.

According to the census of 1930, there were approximately 22,855,000 non-farm houses in the United States; 10,503,000 owner-occupied, 12,352,000 were rented. Surplus housing created during the peak prior to 1929 disappeared during 1931.

[Please turn to Page 80]

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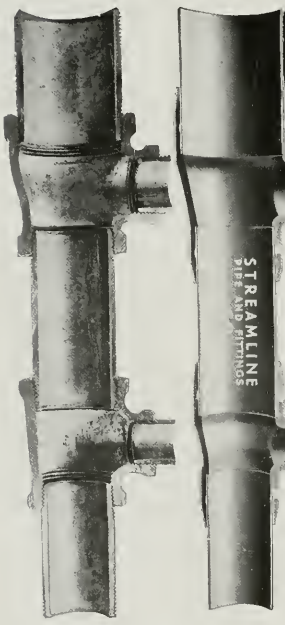
Read about the Termite Survey in San Francisco
on Page 59, top of first column



at last-a NO CLOG pipe

HERE are inside views of a section of threaded iron pipe and fittings and of STREAMLINE Copper Pipe and fittings. Note the smooth, uniform interior continuously through pipe and fittings in the STREAMLINE section.

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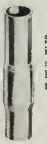

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CONTENTS

COVER PICTURE, DETAIL OF ENTRANCE TO CITY HALL, SANTA MARIA, CALIFORNIA
Louis N. Crawford, Architect

FRONTISPIECE, STREET SCENE, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

TEXT

EXPOSITION 11
William Hamilton

HOME DESIGN 19
Rexford Newcomb, Dean College of Fine Arts, University of Illinois

CITY HALL 23
Frederick W. Jones

LIME 39

NEWS PLANT 47
James R. Ferguson

CABLES 51

GOLDEN GATE BRIDGE 53

LIGHT WEIGHT CONCRETE MIX FOR BAY BRIDGE 55

WITH THE ARCHITECTS 57

CHAPTER AND CLUB MEETINGS 61

AMENDMENTS TO FIELD ACT 62

PLATES AND ILLUSTRATIONS

CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO . . . 12–17
- House of Hospitality
- Palace of Natural History
- Spanish Village
- Building for Ford Motor Co.
- Palace of Travel
- Avenue of Palaces
- Section of Midway
- Palace of Varied Industries
- Palace of Electricity
- Palace of Photography

SANTA MARIA CITY HALL, SANTA MARIA, CALIFORNIA 23–26
Louis N. Crawford, Architect
- Detail
- General View of Building
- Street View
- Close up of Tower
- Plan

VISTA DEL MAR SCHOOL, SANTA MARIA 26
Louis N. Crawford, Architect

KNIGHTS OF PYTHIAS HALL, SANTA MARIA 26
Louis N. Crawford, Architect

EL CAMINO SCHOOL, SANTA MARIA 28
Louis N. Crawford, Architect

DE MARTIN RESIDENCE, SANTA MARIA 29
Louis N. Crawford, Architect

HISTORIC AMERICAN BUILDINGS SURVEY 31–37
Portfolio of Early California Houses

THE NEW TIMES BUILDING, LOS ANGELES, CALIFORNIA 46
Gordon B. Kaufmann, Architect

DRAWING OF BAY BRIDGE 53

STEPPING STONES FOR THE WORLD'S GREATEST BRIDGE 50

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STREET SCENE, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

Tower of Palace of the Science of Man
BERTRAM G. GOODHUE, ARCHITECT

The Architect & ENGINEER
March, 1935

Exposition

by William Hamilton

● *California International Fair at San Diego will be Unique Contribution to Architectural Planning*

WITH more than eighty-five per cent of the buildings of the California Pacific International Exposition already erected in Balboa Park, San Diego, and the remaining structures definitely taking shape, "America's Exposition of 1935" promises to offer a group of exhibition edifices that will be unique in the exposition annals of the Pacific Coast.

Concisely stated, the architecture of the 1935 California Pacific International Exposition will be a development of the historic and pre-historic architecture of Southwest America, in which modern ideas in building design will be expressed, inspired by the remarkable examples of buildings and decorations in the monuments left by the unknown people who inhabited these favored lands before the advent of the white man.

The embellishments and color treatment of the new exposition palaces will be supplied to a great extent by living forms, trees, shrubs, vines, fruits and flowers, such as only Southern California can produce.

The present park buildings, heritage of the 1915 exposition, are in the Spanish, or, more properly speaking, the Spanish Colonial style and exemplify the culmination of centuries of art and architectural development in this section of America.

Richard S. Requa, Supervising Architect of the exposition, says:

"In designing the new buildings for this exposition we will show by modified examples the steps and progress of this development and through the inspiration and ideas of these old forms, produce an architecture in certain of the new exposition palaces that is in harmony with the development during the last quarter of a century in transportation and the industries.

"Thanks to our sunshine and benign climate, we have the opportunity here to supply color and adornments with living plants instead of academic decorations, such as perhaps could not be accomplished in any

HOUSE OF HOSPITALITY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

PATIO, HOUSE OF HOSPITALITY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

A Replica of the famous convent patio at Guadalajara, Mexico

other portion of the globe. In the Spanish Village and the Court of Pacific Relations, a transitional type of architecture is exemplified, between the prehistoric and the pretentious styles which were produced in the opulent period of Spanish occupation in the Americas. In their proportions and treatment, they are no less interesting than the florid work which followed. They are in special mention should be given to the beautiful Casa dela Rey Moro Garden—reproduced as faithfully as possible—the finest small garden in all Spain, with its alabaster fountain, grotto, lily pond, quaint old well, seats and pergolas. Next in importance is the Alcazar Garden, planned from a section of the extensive and beautiful gardens surrounding the Alcazar in Seville. The Al-

AVENUE OF PALACES, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, BALBOA PARK, SAN DIEGO

the simple, unostentatious, hospitable style that is now influencing the development of our California architecture.

"One of the noteworthy and characteristic features of Spanish, as well as Spanish Colonial architecture, was their patios and gardens, embellished with fountains and brilliantly decorated tiles. These important enrichments unfortunately were lacking in the 1915 fair, but are to be one of the most prominent features of our present exposition. Among these features, cazar Gardens in Spain are considered the finest public gardens in the country.

"In the center of the House of Hospitality, the finishing touches are being put on a patio which is not unlike the famous patio in the Museum in Guadalajara, Mexico. Chief features of this patio are the arcaded galleries, the large tiled central fountain and pool and the quaint old well, embowered in bananas.

"Another quaint and charming garden is in the court in the Pacific Relations group

PALACE OF NATURAL HISTORY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO
William Templeton Johnson, Architect

A SECTION OF THE MIDWAY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

CORNER OF SPANISH VILLAGE, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO
Richard S. Requa, Supervising Architect

with its fountain, old well from Algeciras, Spain, and the large pool in which the beautiful trees of the background will be reflected."

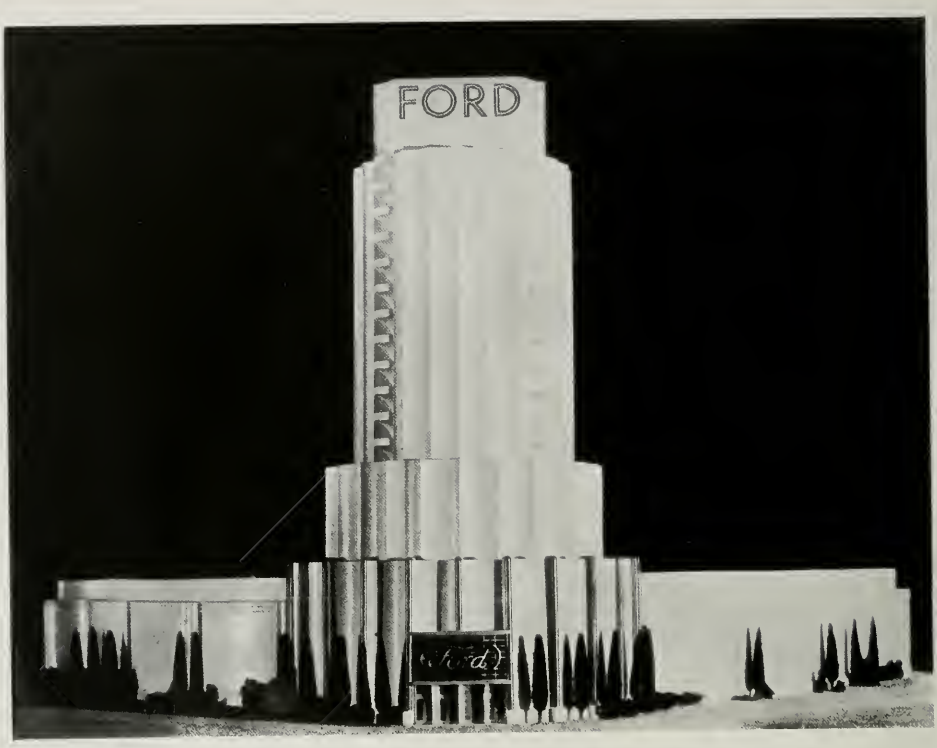
Perhaps the outstanding exhibition building to be erected by an individual exhibitor will be the Ford Motor Company building.

Although this structure, purely modern in conception and treatment, will not be of the Spanish or prehistoric derivation, it will be developed in such a manner as to blend harmoniously with the entire physical plan of the exposition buildings as well as locale.

Situated on the rolling plateau, southwest of the Organ Pavilion and the Music Bowl, the Ford Building will be of circular construction, approximately 350 feet in diameter with a circular patio in the center. The walls of the main building will be forty-one feet high; a tower on the north side of the structure forming the great entrance rotunda will be 198 feet high with a base 100 feet in diameter. This tower will rise to a height of 420 feet above sea level. The total floor area of the building will be 118,000 square feet.

The exhibition of late models of Ford motor cars will be the main feature of the patio. It is believed that this will be the first time in automotive history and one of the

PALACE OF VARIED INDUSTRIES, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO



BUILDING FOR THE FORD MOTOR CAR COMPANY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO
Walter Dorwin Teague, Architect

PALACE OF BUSINESS MACHINES AND ELECTRICITY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO
Richard S. Requa, Supervising Architect

PALACE OF TRAVEL AND TRANSPORTATION, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

few places in the world where climatic conditions will make possible an all year display of cars under the open sky.

In accordance with Henry Ford's idea that art forms a perfect expression for mechanical processes, the exhibition throughout will achieve a blend of artistic harmony. Murals above rare wood wainscots will decorate the walls and color schemes that conform with the entire decor will be used.

Walter Dorwin Teague of New York is the designer of the building and the interior treatment. Mr. Requa is supervising the architectural and engineering plans. He will also be in charge of the actual construction operations.

PALACE OF PHOTOGRAPHY, CALIFORNIA PACIFIC INTERNATIONAL EXPOSITION, SAN DIEGO

The rotunda which will form the base of the tower will be known as the "Court of Nations." Here a series of dioramas around the walls and in the center of the rotunda will be used to depict a dramatic story of the countries of the Pacific.

In the south end of the Ford Building will be found a theater with complete stage and screen facilities and a seating capacity of 350. Smoking rooms, lounges, dressing rooms and other quarters of a semi-public nature will be located there.

The basement and the main floor of the building has been designed to sustain heavy loads and vibrating machinery. It will be of reinforced concrete construction and the entire tower will be of structural steel covered with sheet metal to insure perfect fireproofing.

In the basement will be located service rooms, garage and a tunnel entrance. The building, omitting the tower, calls for steel and wood framing with cement stucco on the exterior. The interior is to be finished with acoustical plaster.

The second floor of the south section of the building will contain several lounges, executive offices and kitchen and pantry facilities. The executive lounge will be utilized for a dining room. Opening from this lounge will be a glass enclosed porch overlooking the city while on the main floor a two hundred and twenty foot terrace on the arc of the circle will afford a sweeping panorama from Mexico to Point Loma.

Lighting effects throughout the building will be given careful consideration with the tower receiving an unique treatment in this respect. Stepped-back lights will flood the fluted column with overlapping layers of color that will "paint" the tower as the rays ascend from the base.

Monel metal and chromium plated trim will be used to provide striking and modern contrasts against the wood of the interior.

It is important to note that the design of this building, as well as the other buildings to be constructed by individual organizations, while providing distinct personality for each structure, will at the same time assure a complete merger of all in a harmonious general plan.

For this reason it has been stated that the California Pacific International Exposition will be an outstanding contribution to architectural planning for spectacles of this nature. Of a certainty it may be said that beauty of building, embellished with plants and flowers rather than ornamental architecture, will be paramount at "America's Exposition—1935."

Home Design

by Rexford Newcomb
Dean College of Fine Arts, University of Illinois

● *Economic and Social Values of Good Architecture and Landscaping*

TOO often in our minds is architecture divorced from its environment and thought of as separate and apart from that environment. This is a serious mistake and one that any intelligent citizen must view with real concern. As a matter of fact down until the rather recent superficial era in which we now find ourselves, architecture — especially the home — served as alalmost a perfect index to its backgrounds, material and spiritual, and expressed, as could no other art, the life and thought of a race or an age.

Architecture is peculiarly linked with background social and economic considerations which control and color its expression. A consideration of the relation of the environment of any architecture to that architecture itself will bear out the truth of these statements. Consequently he who would have anything to say about the expression of American life in terms of architecture must of course know a great deal not only about the history and genius of that people but also about its social fabric and economic status.

That there is a wide misunderstanding of Americans about American life, its meaning and intent, is all too apparent to any serious student of American domestic architecture. I presume that the average American, when he thinks of the American home, thinks of the type of thing that is designed in architects' offices and finds its place in the better sections of our American cities or of that relatively rare entity that, in photograph and drawing, graces the pages of our women's journals and our building magazines. But that is not the real American home; that is the American home idealized, a type of habitation at present possible for less than ten per cent of our population. To even the most casual observer then it would appear that there are two general classes of American residential architecture: (a) that which architects design and erect and (b) that commoner un-designed, mine-run variety which forms about 90 per cent of human habitation in America.

Dr. E. E. Wood in her "Recent Trends in American Housing" has not exaggerated the case when she asserts that "less than half of the homes in America measure up to the minimum standards of health and decency." But, you will ask, what does she mean by minimum standards? She has taken the standard laid down by the National Conference of Charities and Correction in the Cleveland Convention of 1912. This specification calls for "A safe and sanitary

Editor's Note—Extracts of a paper read at the Second Annual Mineral Industries Conference—Home Building, in Illinois.

home, healthful surroundings, ample and pure running water inside the house, modern and sanitary toilet conveniences for its exclusive use, located inside the building; adequate sunlight and ventilation, reasonable fire protection; privacy; rooms of sufficient size and number to house decently the members of the family; freedom from dampness and prompt, adequate collection of all waste materials."

You will note that these specifications do not include electric lights, central heating or even a bathtub. Even at that, should this modest minimum be applied, it is estimated that about 95 per cent of the farm homes and some 80 per cent of the village homes of America would fail to qualify because of the lack of a sanitary toilet within the building, and almost as many for the lack of running water.

Distribution of National Wealth

This rather drab picture of the condition of human habitations in what we fondly believe to be one of the enlightened nations of the earth may at first be difficult to understand in face of the facts of our great national wealth and our almost boundless resources. The inquiring mind need not look far, however, for he soon comes to realize that the crux of the whole problem is one of the distribution of the national wealth. When we learn for instance that in normal times about 72 per cent of our people have incomes of less than $1,500 per annum, and that 85 per cent of our people have incomes of less than $2,000 per year, it is not difficult to see that under the present economic order an adequate home is impossible for the great mass of our people. In fact, that 46 per cent of our population own homes of any sort is indeed encouraging.

In the light of these data it appears that adequate housing for a large percentage of our population will depend upon one or another of two procedures:

a) A change in the economic balance that will insure to the low-income groups a larger participation in the national wealth.

b) Governmental participation in housing to the extent that low-income groups may be insured decent habitations at a rental or purchase price commensurate with their incomes.

It would be very difficult to say which of these alternatives is the better or surer. Certainly I cannot presume to settle the matter. As a practical consideration it would appear that the second might be more speedily realized unless very rapid and perhaps very painful shifts take place in the present economic set-up.

Abroad it has appeared easier in practice to lessen the cost of housing (through governmental subsidy) than to change the distribution of income in favor of the lower-paid groups. It seems to disturb the existing order less. Hence such nations as Britain, France, Germany, Austria, Belgium and Holland have resorted to this procedure.

One thing is clear, however, America cannot long dally with the solution of this problem. It is no longer a problem for individuals, for housing experts, sociologists and the like; it is a problem of the gravest national concern and all must turn their hands and minds to it with a will.

I have long since passed the stage of looking at it as an architectural concern; it cannot any longer be viewed from a personal or professional perspective. Sociologists, economists, architects, home-makers, engineers, city planners, manufacturers and producers must all join hands in its solution. In other words all who enter into the process of producing the American home must get the correct social and economic slant with respect to the planned national existence which we are most assuredly entering.

As I indicated above, much of the main engineering necessary to the correct solu-

tion of the problem upon a national scale is of an economic order. On the other hand, research, the production of good building materials at cheaper prices, perhaps even the mass-production of habitations at prices that bring them within reach of a portion of our people within whose group they are not now available, may help some. Moreover, we can, by group housing, more efficient city planning, and better methods of land utilization, accomplish a vast amount of good, particularly with respect to improving the product. I think we should work along all these lines, but I cannot say that this will offer us a complete solution. The real and final answer will in some measure have to do with some sort of a re-apportionment of the national wealth.

Home Important American Institution

As long as our social fabric is predicated upon a pattern in which the family is the unit, so long will the home be a significant and most important American institution, and home-making the most important task of our people. In recent years the urge to accumulate and to develop our resources has gotten many of us off on the wrong track. While material and commercial developments are most necessary, indeed the means to a better and completer scheme of life, we must not lose sight of the correct ball and become so entangled in the business of making a living that we fail to make a life.

The home, the school, the church are still the institutions which make for social stamina and abundantly figure in the patterning of that thing which we call American life. And of these the home is the most important.

All studies of crime and delinquency point to the fact that most of our social offenders come from certain areas in large cities where home and housing conditions are at their lowest, and all psychological and child-study investigations emphasize the fact that those influences which most potently affect character and determine subsequent conduct make their impressions upon child-life between the ages of one and six. That is before public educative agencies come into the scheme of child development at all. Thus it will be seen that correct home conditions are very essential in the correct rearing of the men and women of tomorrow. It is the birth-right of every American boy and girl, no matter what the economic status of his or her parents, to have, at least insofar as it is humanly possible to supply it, the decent, cleanly, sanitary and orderly material environment necessary to the beginning of civilized human life. Could this be vouchsafed to the rising generation, what a splendid effect would be noted in the men and women of tomorrow. * * *

Poor housing is, beyond the question of a doubt, a definite social hazard. Housing conditions which are injurious to health cannot possibly be considered social assets. Housing conditions which preclude an abundance of light (particularly sunlight), which prevent adequate ventilation, which are damp, or without an adequate pure water supply, lack sanitary toilets with gas-tight sewer connections, lack screens and the provision for adequate garbage disposal, or are otherwise uncleanly or dilapidated, are a definite meance to health and therefore constitute a social liability. It is estimated that there are about 250.000 windowless rooms in the city of New York with vast numbers in every large city.

Overcrowding is one of the most important factors in housing in its relation to health. Most of our larger and, indeed, some of our smaller cities, suffer in this respect. "People who work together, play together, and eat together, are very likely to suffer unnecessarily with diseases which are passed from one to another because of close personal relation. This is the case with a long list of diseases such as common

colds, sore throats, bronchitis, influenza, diphtheria, scarlet fever, mumps, chickenpox, whooping cough, measles, and even pneumonia and tuberculosis. House epidemics are very common.

The need for good low-cost housing does not confine itself to the large metropolitan centers; it is a very real and present need throughout the length and breadth of our land.

Much Bad Architecture Here

So far perhaps my remarks have been directed to the question of poor American domestic architecture and its deleterious effects, rather than to the social and economic benefits of good architecture. This has been necessary because of the lamentably large percentage of bad architecture in America. Our first national concern should be to see to it that at least the housing minima above mentioned are made available to every family, urban or rural, throughout this great land.

But what of good architecture? We may have a house that is well-built, sanitary, dry and warm, and still not have good architecture. A large percentage of our homes that fulfill all the above requirements are still economically and socially valueless because of some other serious fault. For instance, we are rapidly learning that ugliness is an economic waste; that the depreciation of the ugly thing is rapid. The Fine Arts Building of the Columbian Exposition of 1893, though built of flimsy stucco, refused to die. A public alive to its ennobling beauty asked its retention and Mr. Rosenwald had it permanently cast in white marble. Again and again history has shown that a beautiful object is enhanced by age, just as a well-ordered life becomes beatific with the passage of the years. Beauty never depreciates. The racial philosophy which gave rise to past forms of beauty may pass, but the truly beautiful thing always retains its ability to inspire. This is as true of a house, or a kitchen within the house, as it is of a painting, a piece of sculpture or a sonata.

Our present national program is, of course, one of making the correct adjustments that will so distribute our material benefits that the greatest good may come to all our people. President Roosevelt is deeply concerned with that program but he has also stated most emphatically that spiritual and moral values are just as important as — in fact cannot be separated from — material considerations. Our national resources of natural beauty in our forests, recreational areas and national parks he has especially stressed. He might have included the home grounds in the recreational areas of the nation. In a word it is becoming apparent all along the line that order, balance—in a word, true functional beauty —have a ministry in life that is as important as utility, stability and cleanliness. And in a peculiar fashion all these qualities are typical of good architecture and have a special significance in the production of the correct home environment. The restful, orderly beauty of the well-designed house becomes, through its influence upon human life, a spiritual force that enrichens life and affords an abiding worth which transcends all economic considerations and fortifies one against the conflicts, rivalries, passions, and defeats of a selfish world.

Meaning of Correct Design

Now good architecture results from correct design. But what do we mean by design? Do we mean some aesthetic sleight-of hand that transforms an ordinary shelter mechanism into something worthwhile? Not at all. Design is not limited to the aesthetic factor alone. It includes or touches upon all the factors that enter into the creation of a dwelling, economic, social and financial, as well as physical. If we are not able to get beyond architecture itself to the background considerations we shall make little progress toward the solution of this prob-

[Please turn to Page 49]

City Hall

by Fred'k. W. Jones

● *Municipal Building at Santa Maria one of the First PWA Projects to be Completed*

IN designing the Santa Maria City Hall the architect has made a sincere effort to catch the spirit of true early California Mission architectural feeling. Mr. Crawford has interpreted that feeling into modern demands without losing sight of changed methods in construction and improved building materials. Skilled labor, for example, has replaced the crude workmanship of the ignorant Indians who built most of California's early Mission structures. The finished composition reflects a nice feeling of solidity and strength with excellent detail and fine blending of color values in the use of materials.

DETAIL OF CITY HALL, SANTA MARIA
Louis N. Crawford, Architect

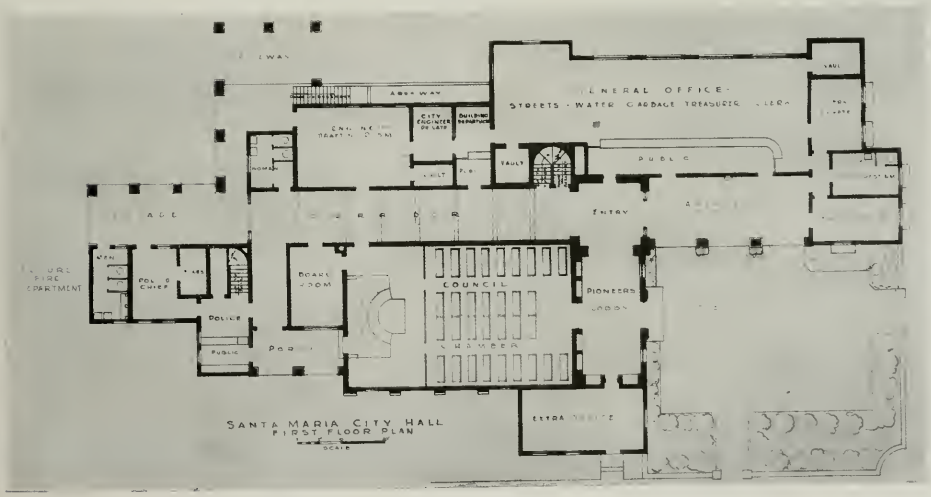
It is interesting to note that the Santa Maria City Hall is one of the first municipal buildings to be completed in California as a PWA project.

The new structure is the realization of a long cherished improvement that seemed but a remote possibility until Federal support was assured. With the government's aid and the earnings from the municipal water plant, financing of the project was achieved and construction was started in January of last year. The building was completed and dedicated in July, 1934, at a cost of $63,880, exclusive of architect's fee and furnishings.

Santa Maria was fortunate in owning an available site close to the center of the city. A generous park area added to the desirability of the site. The location was

THE TOWER, CITY HALL, SANTA ROSA, CALIFORNIA
LOUIS N. CRAWFORD, ARCHITECT

CITY HALL, SANTA MARIA, CALIFORNIA
Louis N. Crawford, Architect



PLAN, CITY HALL, SANTA MARIA, CALIFORNIA
Louis N. Crawford, Architect

STREET VIEW, CITY HALL, SANTA MARIA, CALIFORNIA
Louis N. Crawford, Architect

VISTA DEL MAR SCHOOL BUILDING, GAVIOTA, CALIFORNIA
Louis N. Crawford, Architect

KNIGHTS OF PYTHIAS HALL, SANTA MARIA, CALIFORNIA
Louis N. Crawford, Architect

left to a vote of the people and the space on which the building stands was a five to one choice. It was the idea of the City Council that the new building should accommodate all the departments of the city for existing present and future needs. The structure therefore is somewhat larger than conditions require. The building houses the general clerical offices (city clerk, assessor, sewer, streets, water and garbage departments) together with separate accommodations for the building department. Inadequate jail facilities made it proper to provide a city jail also.

The Council chamber and Court room with the Pioneer's lobby and Board room, comprise the largest unit. Separate offices were provided for the Mayor and there is an extra unassigned office which will eventually become the headquarters of the Health Department.

There is a large basement containing a storage space, heating equipment and janitor's workroom. The building is so arranged that access to the clerical department may be had both from the outside and inside. The Police Department is at one end of the building, so arranged that it may be shut off from the rest of the building, but is accessible from either the front or the rear. Provision has been made for a future extension at the east end to accommodate the Fire Department.

The following are some of the structural and other features of the building: Exterior and bearing walls of reinforced con-

EL CAMINO SCHOOL BUILDING, SANTA MARIA, CALIFORNIA
LOUIS N. CRAWFORD, ARCHITECT

DeMARTIN RESIDENCE, SANTA MARIA, CALIFORNIA
Louis N. Crawford, Architect

crete stuccoed; floors thruout are concrete slabs, waterproofed, and placed directly on the soil; roof and minor partitions are wood frame; all windows are of steel with copper screens in metal frames. Liberal use of acoustical plaster has been made in the larger units of the building. The tower is surfaced with decorative tile in special design. Finish woodwork thruout all main parts of the building is Philippine mahogany, while the floors, except the jail, are cork tile or linoleum. The walls of the Pioneer's lobby and main entrance are faced with a tan colored stone set with a Travertine base. The floors are cork tile. The Council room proper has a seven foot wood wainscot, cork tile floor, heavy plaster and wood beams in the ceiling, and indirect lighting. The Pioneer's lobby, the main entrance and the Council chamber were decorated under separate contract by Patterson Bros. of Berkeley.

The electrical equipment, in addition to normal 110 outlets, makes provision for clocks, phones and teletype system of the Police Department. Provision is also made to take care of future flood lighting. The heating equipment in the basement consists of unit type gas furnaces. The best grade of plumbing was used thruout, all the water lines being run in copper. All of the sheet metal work is of copper.

SEAWEED FOUNTAIN BY BEATRICE FENTON

HISTORIC AMERICAN BUILDINGS SURVEY

NATIONAL PARK SERVICE
U. S. DEPARTMENT OF THE INTERIOR

DISTRICT CAL. 1
IRVING F. MORROW
DISTRICT OFFICER

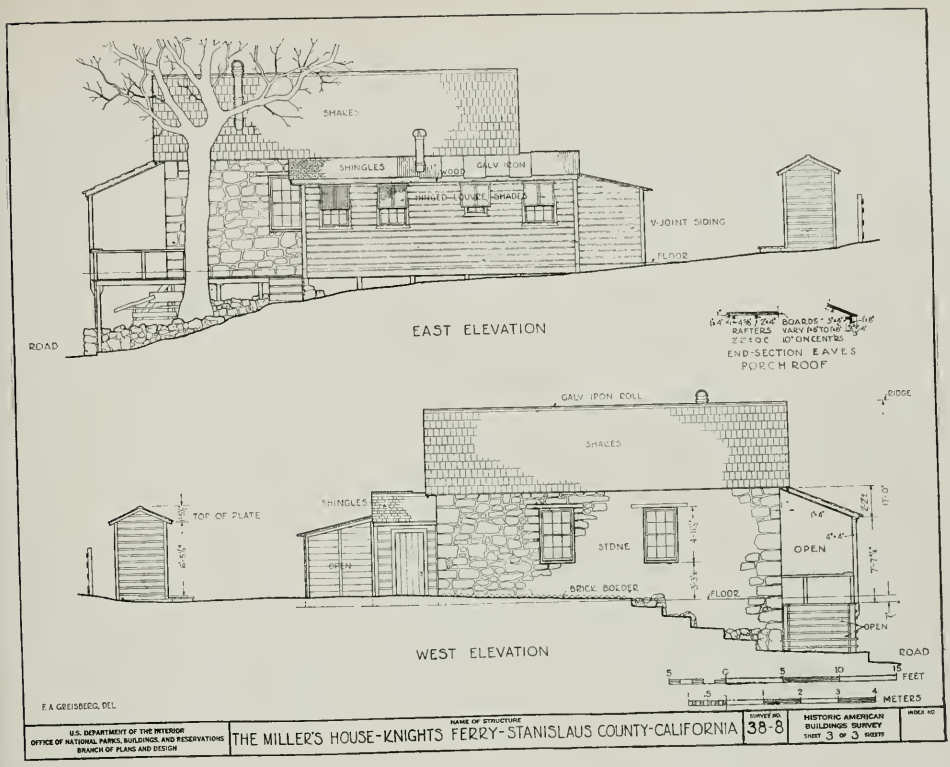
Dorsey House, Sonora,
Tuolumne County,
California

PORTFOLIO NUMBER EIGHT

Early California Houses of Varying
Types and Materials

The Miller's House at Knight's Ferry, Stanislaus County, shown in the drawings opposite and in the photograph at the top of Page 35, is a small stone house with later wood additions, which stands at the end of the old covered bridge over the Stanislaus River.

The house was used as a residence by the miller in charge of the flour mill across the road, about twenty-five yards distant. It was probably built in 1854 or 1862. The original stone portion is yellow sandstone.



NOTES.

MAIN WALLS. SANDSTONE APPROXIMATELY 1'-6" THICK, SEAM FACED AND ROUGH FACED WITH A ½" CHISEL.

COLOR VARIES FROM LIGHT YELLOW OCHRE TO DARK RAW UMBER, WITH OCCASIONAL STONES RANGING FROM ROSE TO VIOLET.

CORNER AND JAMB STONES ALL SQUARED WITH APPROXIMATELY LEVEL BEDS AND FAIRLY UNIFORM JOINTS.

REMAINDER OF STONE WORK IS QUITE IRREGULAR. JOINTS VARYING FROM 2" DOWN TO ⅛".

SOME TYPICAL DIMENSIONS OF STONES AT CORNERS ARE: 39" L. × 13" D. × 9" H; 33" × 8" × 11"; 31" × 12" × 6"; 22" × 9" × 17". DOWN TO VERY SMALL.

LIME MORTAR MADE WITH COARSE RIVER SAND VARYING FROM BUFF TO BROWN. AVERAGE VALUE LIGHT WARM GRAY.

REAR GABLE WALL SHEATHING ⅞" PINE RUSTIC SIDING. EXPOSED FACES VARYING FROM 6¾" TO 8¼", PROBABLY ORIGINAL MATERIAL WALLS OF PRIVY AND PORTIONS OF LEANTO IN REAR ARE OF SAME MATERIAL.

FRONT AND SIDE OF KITCHEN LEANTO HAVE BEEN RENEWED. FRONT WITH PLAIN 1" × 6" T & G. SIDE WITH V-JOINT SIDING ⅞" × 7" FACE, ALL PAINTED BUFF. FRONT GABLE OF SAME SIDING PAINTED DARK GREEN.

BALANCE OF WOODWORK IS OF UNPLANED PINE, PAINTED DARK GREEN.

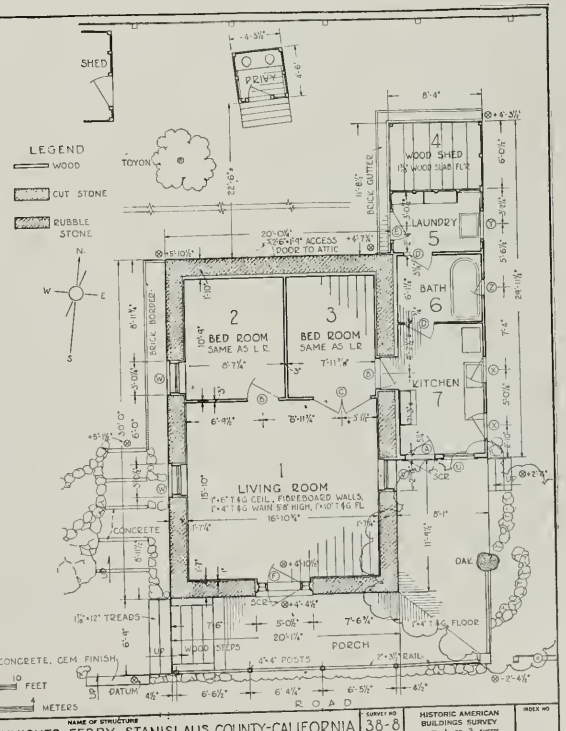
MAIN AND PORCH ROOFS HAVE BEEN RENEWED WITH PINE SHAKES. LEANTO WITH SHINGLES AND GALVANIZED CORRUGATED IRON, ALL UNPAINTED

DOORS —

A	2'-5¾" × 6'-5½" × 1⅜"	OLD 4-PANEL DOOR, LATE SCR. DR.
B	2'-6" × 7'-5½" × 1¾"	OLD 4-PANEL DOOR "B" IN STONE WALL REPLACES ORIG. WINDOW
C	4'-11½" × 7'-5" × 1⅜"	OLD 4 PANEL DOORS
D	2'-6" × 6'-6"	LATER DOORS
E	2'-6" × 6'-4½"	T & G. AND BATTENS
F	2'-11½" × 6'-6⅝" × 1¾"	MODERN SASH DOOR, SIDELIGHTS, SCREEN AND FRAME. ORIG. LINTEL

WINDOWS:

U	2'-8" × 5'-7⅛"	VERT. SLIDING
V	2'-6½" × 4'-5"	VERT. SLIDING, ORIG. FRAME & SASH
W	2'-6½" × 4'-5"	VERT. SLIDING, ORIG. FRAME, SASH REPRODUCTION OF ORIG. SASH
X	2'-3½" × 1'-11½" × 1⅛"	CASEMENT, SCREENED
Y	2'-6¾" × 2'-3" × 1⅛"	PART OF ORIGINAL WINDOW USED AS SLIDING SASH
Z	1'-3½" × 2'-0" × 1⅛"	CASEMENT, SCREENED



This Portfolio shows five early California houses of varying types and materials. The Dorsey House at Sonora, shown on the title page, is a town house of red brick. The Miller's House at Knight's Ferry, opposite, is shown in drawings on the preceding page.

The house opposite is the Schell House at Knight's Ferry, built of yellow sandstone. Motorists to Yosemite by the Big Oak Flat Road pass within a quarter of a mile of Knight's Ferry. The short detour from the highway would well repay for the slight loss of time.

Every Californian interested in the history and early civilization of his state owes himself the treat of a trip along the Mother Lode Highway, (made preferably in spring). The photographs opposite are but the minutest selection from the architectural surprises which await him.

The upper picture on the right is a stone house in Angel's Camp, Calaveras County — Spanish looking, but probably built by people who never heard of Spain. The picture below is a wood house in North San Juan, Nevada County, evidently built by emigrants from New England.

A STUDY IN ROOF LINES

Lime

● *Its Function as an Admixture in Concrete is Described by Noted Engineers*

IT IS well to include an admixture in concrete if by so doing there is resulting improvement in the properties of concrete, effected at less cost than would be involved by the further addition of an equal amount of Portland cement. For the sake of economy and to reduce volume changes, concrete mixes are made as lean as possible without material sacrifice of necessary properties. The leaner mixtures have relatively poor workability, greater permeability, develop less strength and have a noticeable tendency to undergo segregation. The function of a suitable admixture would then be to improve workability, diminish segregation, produce greater impermeability and increase strength in leaner concrete mixes. In a perusal of the numerous and, in some instances, conflicting data, one should keep this question uppermost in mind; what is accomplished by the admixture as we go to leaner mixes?

Durable and lasting concrete undergoes minimum volume changes. Rich mixtures are characterized by relatively high volume changes, a fact that has been well known for years. In order to further reduce volume changes beyond what is normally accomplished through the use of lean mixes, the water to cement ratio is kept as low as possible. Another question, then, that arises in the use of admixtures is: can a given degree of workability be attained with less water when limited quantities of the admixture are incorporated?

Satisfactory and durable concrete construction is a subject of such great importance that all concerned should be primarily concerned with actual data rather than with various interpretations of data. For example, to one who proposes to use a 1:2:5 mix, the effect of an admixture in that mix is not to be found in the conclusions of an author when he states them as generalizations covering various mixes, both lean and rich. It is preferable in this case to study the data obtained with 1:2:5 mixes both with and without admixtures. Furthermore, if the author reports damp storage and the user knows that his concrete will be wet for the first day, drying out thereafter, he cannot be well guided by the results of the continuously wet storage tests. He knows that strength in concrete is developed by slow hydration of cement and that with limited

Editor's Note—This article was prepared by the Construction Department of the National Lime Association, Washington, D.C.

exposure to moisture, strength is reduced. He should be interested therefore in any admixture that tends to retain the initial water in concrete when it is placed where it can dry out at an early period.

With these thoughts in mind it is well to review the existing data.

National Bureau of Standards Tests

Some interesting results are contained in a paper by J. C. Pearson and Frank A. Hitchcock. The work of these authors was performed at the National Bureau of Standards and approved by that Bureau for publication in the Proceedings (1924) of the American Concrete Institute. During the early experimental work the authors developed a penetration test as a measure of workability. The lower the "workability figure," the more workable was the mix. In all tests a constant flow (95 to 100) rather than a constant W-C ratio was maintained. The data pertain mostly to the properties strength, and workability of concrete.

Table 1

Data taken from Table 1, "Economic Value of Admixtures," by Pearson and Hitchcock.

MIXTURE	ADMIXTURES	COMPRESSIVE STRENGTH AT 28 DAYS			WORKABILITY
	Per cent by weight of cement	Damp closet storage	Outdoor storage	Laboratory storage	
		lbs./in.^{2}	lbs./in.^{2}	lbs./in.^{2}	
1:3:6	0	960	800	820	242
"	5 Lime	1,010	870	850	202
"	10 Lime	1,010	880	870	185
"	15 Lime	1,070	870	850	171
"	3 1/3 Kaolin	1,000	830	830	227
"	6 2/3 Kaolin	980	830	760	199
"	10 Kaolin	970	860	810	154
"	1 2/3 Celite	970	820	830	227
"	3 1/3 Celite	1,010	850	810	192
"	5 Celite	1,000	790	770	160
"					

Table I

Conclusions from Table 1

The average compressive strengths, all 3 types of storage, were as follows, no admixture, 860, 5 per cent lime, 910, 10 per cent lime, 920, 15 per cent lime, 930, 3-1/3 per cent Kaolin, 887, 6-2/3 per cent Kaolin, 857, 10 per cent Kaolin, 880, 1-2/3 per cent Celite, 873, 3-1/3 per cent Celite, 890 and 5 per cent Celite, 853 pounds per square inch respectively. Hydrated lime was the only admixture that produced a noticeable increase in strength. The Kaolin and Celite did not impair the strength and improved the workability. Lime improved both properties in the lean (1:3.6) mix.

Table 2

Data taken from Table 1, "Economic Value of Admixtures," Pearson and Hitchcock. [See Table 2, opposite page].

Conclusions from Table 2

In the 1:2½:5 mix the tendency for hydrated lime to increase the compressive strength was slightly less than obtained in the case of the 1:3:6 mix. In the richer (1:2½:5) mix, the compressive strength at 28 days was appreciably reduced by the admixtures, Kaolin and Celite, although they improved the workability.

In conclusion 5, Pearson and Hitchcock state: "The increased yield of concrete containing powdered admixtures is in favor of the latter, and in many cases is probably sufficient to entirely offset the cost of the admixtures. The net saving from the use of admixtures is not in the cost of materials,

but rather in labor cost and greater assurance of uniformity in the finished product."

The Work of H. V. Johnson on Mortars

In the National Bureau of Standards Technologic Paper No. 308, H. V. Johnson has shown that the addition of lime to lean portland cement mortars causes an increase in strength. On page 261 of this publication, Johnson states:

MIXTURE	ADMIXTURES	COMPRESSIVE STRENGTH AT 28 DAYS			WORKABILITY
		Damp closet lbs./in.²	Outdoor lbs./in.²	Laboratory lbs./in.²	
1:2½:5	0	1,380	1,270	1,200	169
"	5 Lime	1,430	1,220	1,240	167
"	10 Lime	1,410	1,250	1,220	125
"	15 Lime	1,400	1,340	1,170	129
"	3 1/3 Kaolin	1,360	1,260	1,180	150
"	6 2/3 Kaolin	1,390	1,240	1,090	130
"	10 Kaolin	1,350	1,150	1,130	105
"	1 2/3 Celite	1,360	1,230	1,140	167
"	3 1/3 Celite	1,390	1,230	1,150	114
"	5 Celite	1,280	1,090	1,070	116
"					

Table 11

"As to the leaner cement mortars, an addition of 29 per cent of lime, based on weight of cement, gave a maximum strength of 1,165 lbs./in.² to the 1:3 cement mortar, wherein, without lime, the strength was 1,030 lbs./in.². The strength of 1:4 cement mortar was 359 lbs./in.², and a maximum strength of 700 lbs./in.² resulted when the added lime was 80 per cent of the weight of the cement. These results refer to mortars which had aged a year."

Johnson shows further that in the rich (1:2) cement mortars, the compressive strength was in general not increased by the addition of lime, although the addition of 10 per cent of lime to the 1:2 mix increased its strength by about 100 lbs./in.².

Johnson obtained the maximum tensile strength in 1:4 portland cement mortar by adding an amount of lime equal to 25 per cent of the weight of the cement. At the same time his curves show an increase in density of 1:3, 1:4, 1:5 and 1:6 portland cement mortars, with addition of lime ranging in quantity up to 90 per cent of the weight of the cement.

These results obtained at the National Bureau of Standards indicate beyond doubt that the addition of lime to lean mortar and concrete mixes improves the workability, increases both the tensile and compressive strength and lowers the porosity (increases the density) of such mixes. Later data obtained by Palmer and Parsons and published in National Bureau of Standards Research Paper No. 683, show that the addition of 15 per cent (by weight of the cement) of hydrated lime to 1:3 portland cement mortar increases the transverse and compressive strength by about 20 per cent, lowers the porosity and improves the workability. The increase in strength was due to the increased retentiveness of water in the mortar through the addition of lime. During the first week of the aging period the mortar specimens dried in a constant temperature-constant humidity room. Portland cement mortars containing lime dried more slowly, under the conditions of tests, than the same mortars without lime.

The Work of Duff A. Abrams

A paper, "Effect of Hydrated Lime and Other Powdered Admixtures in Concrete," was published by Duff A. Abrams in Part II, Vol. 20, of the 1920 Proceedings of the American Society for Testing Materials.

Abram's curves and tabulated data in many instances conflict with his conclusions and this fact is ably brought out in the discussion of the paper. The experimental work was done at the Lewis Institute under the auspices of the Portland Cement Association. There is no doubt whatever that the conclusions of Abrams are not generally in good agreement with those of Pearson and Hitchcock at the Bureau of Standards.

His conclusion that in lean concrete mixes the strength is not diminished by the addition of lime, is true. It is not the whole truth however, for it is also true that lime actually did increase the compressive strength of his lean mixes as his tabulated data clearly show.

In conclusion 14, Abrams states:

"Powdered admixtures increased the yield of concrete. For hydrated lime in the usual concrete mixtures the increase in volume of the concrete (yield) was about 60 per cent of the loose volume of lime added."

Tests by M. O. Withey

Permeability and strength tests, using lime as an admixture, were made in 1920 at the University of Wisconsin by Professor M. O. Withey, using two different concrete mixes (1:2.8:6.5 and 1:2.1:4.9). In conclusion, Professor Withey states:

(1) "Hydrated lime, when added to the cement increased the compressive strength of the concrete which had a slump of 4 inches, about 4 per cent for each per cent of lime added. For the concrete having a slump of 9 inches, the strength was increased about 6½ per cent for each per cent of lime added."

(2) "The 1:2.8:6.5 mix by volume was very pervious. The addition of 4 per cent of hydrated lime increased the imperviousness of the mix very materially. The addition of 8 per cent of hydrated lime produced practically the same effect as the addition of 4 per cent." A year later (1921) after further tests, Professor Withey concluded:

(1) "The rate of flow of water into specimens was, in general, decreased by the addition of hydrated lime to the mix. The decrease was also generally greater for 10 per cent of lime than for 5 per cent."

(2) "For the gravel concrete series of 4 inch slump the results do not indicate a great advantage in the use of hydrate lime. The set with 5 per cent of lime was somewhat more impervious than the plain concrete, and the set with 10 per cent of lime showed about the same flow as the concrete with no lime."

(3) "The series of gravel concretes with a 9 inch slump shows that the addition of 5 per cent of lime slightly decreases the flow of water, and that 10 per cent of lime decreased it to less than half of the flow for plain concrete. As before, the results are variable for the plain concrete, slightly more uniform for 5 per cent of lime, and quite uniform for 10 per cent lime. . . . Again the uniform results and decreased rate of flow indicate that hydrated lime increases the water-tightness of the concrete."

(4) "The limestone series of specimens gives average results which indicate that the addition of 5 per cent of lime decreased the rate of flow to about one-tenth of the rate for plain concrete, and 10 per cent of lime causes some additional reduction."

(5) "These results again show that hydrated lime decreased the permeability of concrete, but do not give any indication of the relative effect of the addition of 5 per cent and 10 per cent of lime. The great gain in water-tightness when 5 per cent of lime is added can be attributed mainly to gain in workability, and partly to the effect of the lime in

filling the voids in the mix—The first 5 per cent of lime made the mix workable, and dense cores were obtained. The addition of the next 5 per cent of lime could not be expected, in the case of this aggregate, to cause a corresponding gain in water-tightness."

Report of R. W. Priest

The following is a synopsis of Mr. Priest's report on "Hydrated Lime in Wacker Drive Concrete".

"A certain degree of skepticism is often expressed by engineers and contractors as to the real advantage to be gained by the use of an admixture in concrete. Questions as to the relative strength-deterioration, absorption, permeability, density and workability of concrete with and without an admixture often arise. As Field Testing Engineer for the City of Chicago on the Wacker Drive, the writer has had exceptional opportunity to study this question. The facts obtained by test on this job are believed to be conclusive.

"Hydrated lime was used as an admixture in approximately 60 per cent of the 120,000 cubic yards of concrete in this project, the exception being that lime was not used in the concrete placed below ground, such as caissons, sub-girders and pavement foundations.

"The concrete on this work was a nominal 1:2.33:3.67 mixture (1:6 specifications). The fineness modulus of the coarse aggregate and the sand were respectively 6.84 and 2.86. The total water allowance was 7 gallons per sack of cement and each batch of concrete was mixed 1½ minutes in a rotary batch mixer. From all concrete poured, 6-inch by 12-inch field cylinders were made at regular intervals and cured under three conditions so that the results express actual conditions in the concrete as placed.

"These field specimens were tested for compressive strength at various ages up to one year and additional specimens were tested for absorption and permeability. The results of these tests are now available and it is possible to make a conclusive comparison between the concrete without admixture and concrete containing 8 pounds of hydrated lime per sack of cement.

"A careful study has been made of the compressive strength of about 1,000 representative cylinders taken over a period of two years. These thousand cylinders are only about one-sixth of those taken on the job, but they represent identical mixtures and identical conditions, of curing and testing, which are necessary for a fair and conclusive comparison."

The table below is self-explanatory:

"Considering the large number of the tests made under identical conditions, it is conclusive that the addition of lime does not lessen the strength of concrete and, *without reducing the water content as is possible with lime, the strength was slightly increased at all ages tested.*

"In a test to determine the effect of the addition of lime on the absorption of con-

Number of Cylinders	Age at Test	Compressive Strength Average Per Square in.
Concrete without lime (1:6 Mix)		
250	7 days	1,632 lbs.
250	28 days	3,176 "
10	1 year	4,362 "
Concrete with 8% lime (1:6 Mix)		
250	7 days	1,720 lbs.
250	28 days	3,214 "
10	1 year	4,630 "

Table III

crete, it was found that these cylinders containing the admixture absorbed an average of 3.23 per cent of water by weight during an immersion of 96 hours. The specimens without the lime gave an average absorption of 4.126 per cent with the same time of immersion.

"The investigation also included penetration tests which were on disc specimens 8 inches in diameter and 2 inches thick, 28 days old at the time of test. Ten square inches of the face of these discs were subjected to a water pressure of 22 pounds per square inch for a period of 72 hours. The discs containing no admixture permitted the passage of 15 per cent more water than those containing hydrated lime.

"In order to settle, to our own satisfaction, the question of the yield of concrete when an admixture is used, a series of tests were conducted which demonstrated that the use of 8 per cent of lime did not give an increase, but rather resulted in a slightly less volume of concrete than when it was omitted. The writer believes that this work proves that concrete containing lime is more dense than without it.

"In conclusion it was observed on the work at Wacker Drive that concrete containing lime was more plastic and workable, and was more easily handled with less chance of segregation of aggregates. To a contractor these features are money savers.

"From the engineers' standpoint it was observed that with lime, less water was needed to make a workable mixture. The tests showed increased strength, decreased absorption and decreased penetration; all of which follow logically the demonstrated greater density of lime concrete."

Effect of Lime As an Admixture

The foregoing data of Pearson and Hitchcock, Johnson, Abrams, Withey and Priest, show that lime improves the strength, workability and imperviousness of the more commonly used concrete mixtures.

Volume changes in concrete may be reduced by:

1. The use of lean mixes.
2. Improvement of homogeneity (better mixing and less segregation).
3. Reduction of permeability.

Lime accomplishes these three things. By improving workability, lean mixes are more easily placed, hence one of the major objections to the use of lean mixes is removed. By minimizing segregation, lime tends to produce a homogenous concrete, that is, good distribution of cement, sand and aggregate. If such distribution is not realized, the magnitude of volume changes will be different at different points in the concrete and this condition is magnified by the fact that with a lack of homogeneity the rates of wetting and drying of concrete vary from one point to another in the solid concrete. Lime reduces the permeability and thereby tends to minimize variations in moisture content which cause volume changes.

Recommended Formula

It has been found in practice that the most satisfactory results are usually obtained by use of the formula $L=6\ (S-\frac{1}{2})$; where L is the weight in pounds of hydrated lime per sack (94 lbs.) of portland cement, and S is the proportion of fine aggregate in the concrete mix. Thus, for a $1:2\frac{1}{2}:5$ mix, $L=6\ (2\frac{1}{2}-\frac{1}{2})=12$ lbs. hydrated lime per sack of cement. This formula holds good for the water-ratio and fineness modulus methods of proportioning, as well as the older method of arbitrary proportions. For convenience in measuring the required amount of the admixture, one has only to remember that a gallon measure holds 5 pounds and a 12-quart galvanized pail 15 pounds of hydrated lime.

The efficacy of hydrated lime as a water-tightening agent in concrete is due to two distinct properties inherent in the lime itself. These properties are:

(1) The extremely minute size of the individual particles, and the collcidal or gelantinous nature of the most infinitesimal of these particles when thoroughly saturated with water.

(2) The natural viscosity or stickiness of the lime putty produced when lime is mixed with water.

The economic advantages of the use of lime in concrete are:

(1) More water-resistant concrete surfaces are obtained, and hence the rate of depreciation of concrete members and structures is greatly reduced.

(2) Equal strength and workability can be obtained with leaner concrete mixes.

(3) The cost of handling and placing the concrete is reduced; for the addition of lime not only makes a stiffer, denser, more workable paste, which holds the coarse aggregate in suspension and prevents the fine material from rising to the top, but also acts as a lubricant thereby promoting ease in transporting and placing concrete in the forms and around and between reinforcing steel.

(4) The necessity for patching or finishing exposed concrete surfaces is reduced to the minimum since the sticky lime putty effectively prevents segregation in the concrete and gives a smooth, unmarred surface of uniform color and texture free from objectionable honeycombing.

The emphasis placed on durability of concrete through the activities of Committee 801 of the American Concrete Institute and reported in preliminary form in A.C.I. Proceedings for 1931 invites consideration of a few typical concrete projects involving the use of lime as an addition to the concrete.

The two-level street improvement known as Wacker Drive in Chicago involved the placement of 120,000 cubic yards of concrete all placed under water-cement ratio control. Due to the severe exposure to the elements imposed by its location, the addition of hydrated lime was specified for reinforced concrete other than lightly reinforced massive work.

T. A. Evans, Engineer of Design on this work, is authority for the following statement:

"We have poured a portion of the viaduct structure without the use of hydrated lime and have found that the work of handling and tamping around heavily reinforced portions of the concrete structure was greatly facilitated on the sections on which we have added lime to the mixture."

In a paper before the 23rd annual convention of the A.C.I. in 1927, Arthur R. Lord, Consulting Engineer on Wacker Drive states: "We found that the use of 50 lbs. of hydrated lime per yard batch of concrete had no observable effect on the strength of our concrete and we have probably three thousand tests to judge from. We found also that the use of lime in this proportion made our concrete more workable, easier to place and less liable to segregation in transportation and handling. Past experience indicated that it decreases permeability while twenty years experience in its use in this manner has not confirmed any opinions to the effect that the lime will be carried away after the concrete is once properly made and placed."

America's greatest dam at Muscle Shoals, Alabama, is another outstanding example of first quality durable concrete in which lime was used. This work built under supervision of the U. S. Engineer Corps, involved the mixing and placing of 1,300,000 cubic yards of concrete to which was added 25 lbs. of hydrated lime for each cubic yard of concrete.

THE NEW TIMES BUILDING, LOS ANGELES, CALIFORNIA
GORDON B. KAUFMANN, ARCHITECT

News Plant

by James R. Ferguson

● *New Times Building in Los Angeles has Earthquake Bracing and Complete Air Conditioning Equipment*

FRONTING on the Los Angeles Civic Center, with its six stories and clock tower rising in graceful set-back lines to a height of 150 ft., the new Times Building, 210 West First Street, conforms in design to the group of structures already completed in the Civic Center—the State Building, the City Hall and the Hall of Justice. Another year will probably see the addition of county and Federal buildings.

Monumentally modern in design, built of reinforced concrete, completely fire- and earthquake-proof, the building has been planned to endure. Some idea of its magnitude may be gleaned from the following figures:

Included in the building are 4200 tons of steel, 150,000 sacks of cement, 35,000 tons of rock and sand; 50,000 cu. yds. of excavation; 58,000 sq. ft. of Indiana limestone for exterior facing; 9000 sq. ft. of California black granite; 17,000 sq. ft. of clay tile for roof decks and tower roof; 62,000 sq. ft. of hollow partition tile; 100,000 sq. ft. of plastering—plain, decorative and acoustical; 75 miles of electric wiring and many miles of piping. There are six acres of floor space.

Housed within the Times Building's walls is one of Los Angeles' largest steam generating plants. In the sub-basement, supplying heat and power for all incidental needs are three giant boilers, each of 304 h.p. nominal rating and 600 h.p. capacity, and each having 3040 sq. ft. of heating surface. The working pressure is 200 lbs. per sq. in. Each boiler is furnished with a Riley super-heater providing 150 deg. F. of superheat. The plant is equipped with four draft fans for supplying combustion air. Each unit is fired with two gas burners with a rating of 150,000 cu. ft. each of gas per hour.

These three boilers are capable of generating 1,800,000 watts of current for the power plant which will supply both direct and alternating current for the estimated light and power requirements of the new building. The power plant will be connected with public utility lines for stand-by and economic reasons, the arrangement being that the plant can be served from either line.

The instrument panel for each of these boiler units includes two Isometers, hooked to the following service: steam, 200 lb. gauge at 540 deg. F.; 18,000 lb. of steam per hr.; 250 volts, 60 cycles. In addition, there is a Hayes pointer draft gage for fan, furnace and uptake; also a temperature and pressure recorder and a combustion meter.

New Type Meter Room

The meter room in the basement has been pronounced by industrial gas engineers as one of the most outstanding of its type in the entire region. Here the 10-in. house gas

BOILER PLANT IN SUB BASEMENT TIMES BUILDING, LOS ANGELES

line branches off from the utility's main to the boilers on the floor below. On the 10-in. house line is installed a 4-in. orifice meter with a capacity of 75,000 cu. ft. per hr., together with a recording differential and static pressure gage measuring the fuel consumption of the boiler plant. A meter of 10,000 cu. ft. hourly capacity is connected to the miscellaneous gas equipment through the buildings, including the kitchen ranges, incinerator, and stand-by equipment for the linotype and stereotype pots.

On this same floor the great rolls of newsprint paper are stored, and for quick disposal of paper refuse accumulated in the handling of the rolls on the narrow gage railway which covers the whole floor, a gas incinerator has been installed.

On the main floor, in the huge pressroom housing the 250-ft. Hoe super production 18-unit press which will spin out 50,000 newspapers hourly, the stereotype pots are equipped for emergency gas service in case of the failure of electric power. These burners each consume 1.5 cu. ft. hourly.

The upper floors, housing the business and administrative departments of the organization, form an arresting exposition of the contributions that can be made by modern engineering and architectural design to the efficiency and comfort of the office personnel. Here is deep silence, cool and restful, with all the noise, dust and heat of the city shut out. Winter and summer, the same degree of temperature, healthful humidity and nerve-soothing quiet will prevail. For the entire building is equipped with mechanical ventilation and air-conditioning. All windows are double steel casements, with venetian blinds.

Building is Air Conditioned

The windows can be opened, but seldom if ever will be, for every bit of air in the building will be drawn from out of doors at the rate of 372,600 cu. ft. a minute through water sprays where dirt and dust are removed and the correct amount of moisture regulated. Ventilation, properly humidified, together with the right degree of warmth or coolness, as the season dictates, is supplied with Weathermaster units set in the window bays and encased in grilled cabinets that match the wooden paneling of the walls. In the ceiling are the exhaust ports through which vitiated air is drawn out of the rooms by the great fans which form part of the air-conditioning system that has been installed on the top floor.

This installation consists of air washers and induced-draft fans, which are supplemented by three cooling towers 40 ft. high installed on the open roof. Steam generated

in the boilers in the sub-basement will drive the main generators and can be re-used for either heating or refrigeration purposes. For the cooling system, exhaust steam from the power plant will turn the low-pressure turbines which furnish power for the refrigerating machines, which have a capacity of 375 tons. For the heating system the steam will be used in the radiators, and after being used will be reconverted into water and cooled in two large tanks in the clock tower, ready for re-use.

Air-conditioning in the Times Building will serve a dual purpose. It not only will keep the offices at a comfortable temperature, but will provide the conditions necessary for perfect production of newspapers. In addition to keeping stored newsprint in good condition for printing, the ventilation system will remove heat generated by machinery, carry away fumes from the stereotyping room, prevent dust, and remove ink particles from the air around the presses.

The air-conditioning system will operate in 1,000,000 cu. ft. of space in the building — the 800,000 cu. ft. representing the amount of "comfort" conditioning and the 1,000,000 cu. ft. the amount used in the industrial section of the plant, both for comfort and to provide the conditions necessary for perfect production.

HOME DESIGN

[Concluded from Page 22]

lem. I should say that design is simply the selection of means to the accomplishment of ends. These ends or objectives are the background considerations of which I speak. Now what are they?

The Committee on Homemaking of the President's Conference performed a splendid service in codifying these objectives so far as the American home is concerned. In brief summation, the aims of the American home the committee held to be as follows:

"a. To provide a background of peace and security so that the members of the family may relax from the strain of modern life outside.

"b. To provide for privacy—the refuge where one can be alone and indulge one's own desires in meditation, reading or following an avocation or hobby; for without some privacy there can be but limited use of one's leisure.

"c. To provide an environment where members of the family may enjoy one another's companionship, where their affectional needs as human beings may be satisfied.

"d. To provide opportunity for social contacts—a place where all members of the family, both parents and children, may entertain friends."

To these objectives should be added the physical requirements of:

1) Complete means for the fulfillment of the creature comforts of the human organism (i. e. abundant pure air, sunshine, water and the sanitary contrivances necessary to complete bodily health and vigor.)

2) Sound construction.

3) As much symmetry and beauty of the resultant architectural forms as is compatible with the above named requirements.

4) Appropriateness of these forms with respect: (a) to the material of construction and (b) to the geographical setting.

The true basis of architectural design is the plan. The plan of a structure absolutely determines the character of that structure. This is true not only with respect to the fulfillment of the requirements for complete living, but also with respect to its lines, forms, and mass. In general, a plan that is more complicated (i. e., less orderly and direct) than need be is a bad plan, and will result in poor architecture. Simplicity and balance, efficiency, and a natural or obvious relationship of rooms (based upon usage) are fundamental to a good plan.

Courtesy California Highways and Public Works

"STEPPING STONES" for the World's greatest bridge. In the foreground are seen the pier foundations for the East Bay crossing extending to Yerba Buena Island with a view of a traveling derrick erecting the last of the 288 foot spans of the Oakland shore superstructure. Beyond the island is seen the entire West Bay Crossing, with Tower W-5 under construction and the city of San Francisco in the background.

Cables

Huge Aerial Wheels Shuttling Across Bay in Span Cables for the San Francisco-Oakland Bridge

WITHIN a short time a wire rope will be drawn across a mile of water between San Francisco and the concrete center anchorage of the San Francisco-Oakland Bay Bridge, midway to Yerba Buena Island. This wire rope will be raised to the tops of Towers W-2 and W-3, and will be the initial support of the first of the two catwalks to be built over the bridge tower tops preparatory to spinning the cables of the first of the twin suspension bridges between San Francisco and Yerba Buena Island.

This wire rope will be drawn across by a reel barge of the Columbia Steel Company, laid in the water, and then elevated to its place by means of derricks on the tops of the towers.

A mesh of steel will be laid between four such cables which, with hand rails, will constitute the temporary catwalk upon which state engineers, inspectors, and workmen will string the 17,464 parallel steel wires which comprise one of the two cables that will eventually support the double-deck San Francisco-Oakland Bay Bridge over the West Bay crossing.

With the completion of this catwalk an endless cable will be erected with two 5-foot diameter spinning wheels attached to it. At this time the contractors will move 16-ton spools of cable, each holding sixty miles of wire, to the Rincon Hill anchorage, San Francisco, and the concrete center anchorage in the midwest bay.

These spinning wheels will be shuttled swiftly (perhaps 600 feet per minute) across the mile course between Rincon Hill and the center anchorage, over the tops of the towers in the same sweeping curves and deflections that will characterize the final cable.

The amount of the deflection, or curve, in the wires thus strung by the shuttling wheels will be determined by a guide wire set in place and measured carefully. This guide wire will be drawn many feet higher in the sags than the final cable. This is done so that the weight of the cable will cause it to sag into accurate position.

Calculations made in advance by Chief Engineer Purcell's staff foretell the amount of increase in the sag of the completed cable over the first few wires. Accordingly Chief

Engineer Purcell expects to be able to spin these wires so that the weight of the final keg-sized cable of 17,464 wires will bear it down to the exact height required.

The increased sag of the completed cable will be brought about by the elasticity of the steel wire cable and the bending of the towers, which were built sufficiently out of perpendicular so that this added weight will correct the towers' unloaded positions.

The elasticity of steel, which stretches with less damage to its body than rubber if kept within the limits of its tensile strength, is carefully calculated and accounted for in all these operations. Nothing, Chief Engineer Purcell points out, is left to be worked out on the job, everything being calculated on the blue prints in advance.

And this, the West's first view of major suspension bridge building, will take place during the year 1935 in the West Bay.

In the meantime during this year, the East Bay crossing will be practically completed save for a gap of 576 feet in the center of the 1400-foot cantilever span over the navigable portion of the East Bay waters, just east of Yerba Buena Island.

Fourteen deck-truss spans have already been completed in the East Bay crossing, and the year 1935 will see the five through-truss 500-foot spans erected, together with the four Yerba Buena Island deck-truss spans and the anchor and cantilever arms of the 1400-foot cantilever—in fact, all of the East Bay crossing save the suspended portion in the middle of the cantilever span.

BAY BRIDGE, ENTERING YERBA BUENA ISLAND, AS SEEN FROM THE EAST SIDE

Through Yerba Buena Island a horseshoe-shaped bore will have been completed early in 1935 lined with concrete to form the outer concrete wall of the completed tunnel. The core of rock left within the horseshoe will be excavated by blasting and steam shovel, and will probably be the first time a steam shovel has been used in excavating a tunnel. This is made necessary by the size of this tunnel—58 feet by 76 feet—probably the largest bore tunnel ever undertaken.

G. G. Bridge

● *Steel Contractors Racing Against Time to Make $1500 a Day Bonus*

ONE of the most spectacular races the world ever has known is under way out in the Golden Gate, 1100 feet off historic Fort Winfield Scott, where the construction of the south tower of the Golden Gate Bridge was started February 1.

Sometimes shrouded in fog — always harassed by wind and tide—the racers are plugging doggedly ahead.

They are the Golden Gate Bridge and Highway District and the McClintic-Marshal Corporation, contractors for the steel superstructure of the world's greatest single span suspension bridge.

The strange feature of this race is that if one loses both lose and if one wins, both will benefit.

In reality the McClintic-Marshall Corporation is racing against time. The engineer's schedule calls for the completion of the tower by September 1. For each day up to 60 days the contractor is able to save over this date he will receive a bonus of $1500. If more than 60 days are saved there will be an additional bonus of $750 a day over the first $1500.

Completion of the tower earlier than the scheduled date will mean that the Golden Gate Bridge will be open to traffic ahead of the present schedule, which sets the opening date as May 1, 1937.

This means that for every day saved the bridge will be paying its own way through the income derived from tolls paid by users. Thus the interest on bonded indebtedness will be cared for out of the bridge's earnings and the district will win by a substantial margin through losing to the contractor in the tower race.

On the Marin side of the Golden Gate nearly a quarter of a million dollars is to be spent within the next few months. The contractor is overhauling equipment preparatory to commencing work on the anchorage housing between the main anchor blocks and pylon H-1. Preliminary work for the cable contractor on the top strut of the Marin tower is virtually completed.

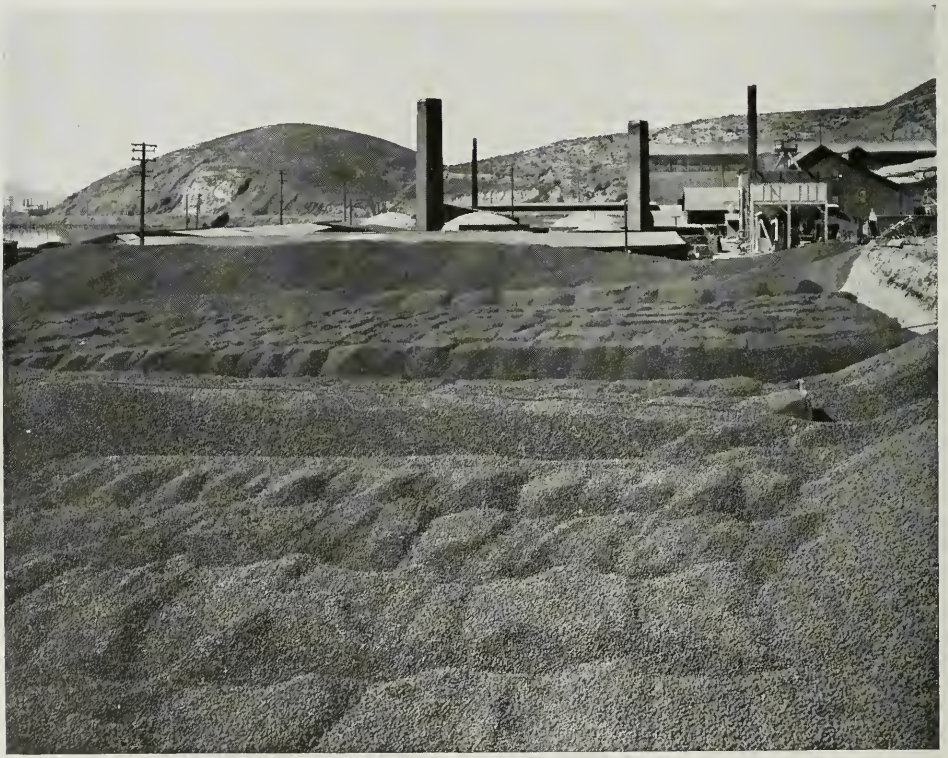
In the Trenton, New Jersey, plant of the John A. Roeblings Sons Company, cable contractors, approximately 60 per cent of the cable wire, or 12,577 tons, has been accepted and stored. Shortly this

wire will commence moving to the company's California plant recently established near the State Nautical School on the upper bay shore in Marin county.

In order to determine the most satisfactory coating to protect the cable wire during its shipment through the Panama canal and tropical waters, a trial shipment was dispatched here from Roeblings' eastern plant arriving early in March.

In this shipment 6 different materials were applied to the coils of wire. Some were wrapped in paper and others coated with various waxes and greases.

Upon their arrival samples were taken and carefully wrapped in cotton batting and then shipped back by express to the eastern mills for chemical analysis. Upon the results of the findings of the laboratory the final determination of the proper protective coat for cable shipment will be made.



STOCK PILE OF GRAVELITE AT PLANT, POINT RICHMOND, CALIFORNIA
This material mixed with cement makes a light weight concrete that is destined to revolutionize the present method of making structural concrete. Engineers say its use on the upper deck of the Bay Bridge will mean a saving of 20,000 tons in dead weight

LIGHT WEIGHT CONCRETE REDUCES COST OF BAY BRIDGE ROADWAY

A SAVING of over 40,000,000 pounds in the dead weight of the upper deck of the San Francisco-Oakland Bay Bridge is being effected by the use of a revolutionary type of light-weight concrete, according to a statement recently released by Charles H. Purcell, Chief Engineer. The new material is called Gravelite Concrete. Although it weighs one-third less, it has the same strength and appearance as ordinary concrete and has met all the exacting tests prescribed by the bridge authorities.

It is made from ordinary Portland cement and Gravelite, a light weight aggregate manufactured from clay and shale at Point Richmond, California, by Gravelite, Inc. It is used in the concrete in place of sand and gravel. The size and shape of the particles are virtually the same as in the conventional mixture of sand and gravel in ordinary concrete.

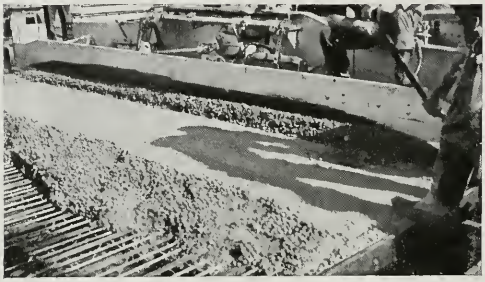
In making the new concrete, Gravelite is mixed with cement and a small amount of fine natural sand and water is then poured into place in the same manner as ordinary concrete. But Gravelite Concrete is quite different in many of its important properties, weighing only about 100 lbs. per cubic foot, against 150 lbs. for ordinary concrete.

The upper deck of the Bay Bridge will be a continuous slab (except for occasional expansion joints) of reinforced Gravelite Concrete six inches thick, sixty feet wide and extending the entire length of both the western and eastern bay crossings of the bridge, a distance of 4¾ miles. This slab of light-weight concrete will contain 28,000 cubic yards and it is claimed will weigh 20,000 tons less than the same slab would weigh if made of ordinary concrete. This represents a net saving of the same amount in the dead weight which

ROTARY KILN AND HOT STORAGE BIN AT GRAVELITE PLANT, POINT RICHMOND

has to be carried by the cables, trusses and foundations of the bridge, and on that account Gravelite Concrete, according to the engineers, will effect an important financial saving in the construction of the entire bridge. Possibly a better idea of what 20,000 tons saving in dead weight of the bridge means, may be had from consideration of the fact that this weight is equivalent

to from 500 to 600 gondola cars fully loaded with ballast. The design of this slab required that Gravelite Concrete must develop a compressive strength of 3000 lbs. per square inch in twenty-eight days, which is a high strength for any con- The magnitude of this strength can be visualized by considering that a cylinder of Gravelite Con-



CLOSE-UP, SHOWING VIBRATING SCREEN IN OPERATION AND STEEL REINFORCEMENT

crete, six inches in diameter, will support a load of more than forty tons before failing.

This new type of concrete may, because of its unusual properties, have considerable effect on future home building and other construction, having been specified for the new office building of the East Bay Utilities District.

It has three times the heat insulating value of ordinary concrete. This means if a house were built with walls of Gravelite Concrete eight inches thick, it would have the same resistance to the passage of heat and cold as though it were built with walls twenty-four inches thick of ordinary concrete, or for that matter, of brick or stone.

PLACING GRAVELITE CONCRETE IN UPPER DECK OF BRIDGE

Gravelite Concrete is almost twice as elastic as ordinary concrete. This property will tend to eliminate the cracking or unsightly appearance ordinarily occuring in large slabs and wall panels.

Gravelite is manufactured from a mixture of hard shale and soft clay which is mined from an open quarry face by a mechanical shovel. It is then subjected to a series of mechanical operations by which various ranges of sizes are separated and accumulated before being burned at a high temperature in a rotating furnace or kiln. The burning process imparts three essential properties to the Gravelite; first, enduring permanence; second, lightness of weight and third, rounded contours.

The treatment in the kiln occupies about one hour, and the finished Gravelite which drops from the lower end of the kiln in a continuous stream is stored and cooled in steel bins. When quite cool, it is taken from these bins and placed in storage piles, each pile containing a different size of Gravelite.

$90,000 STATE BUILDING

A $90,000 California State building is to be erected at the California Pacific International Exposition, which opens May 29 in San Diego.

The state building will be an SERA project, arrangements for its construction having been effected between local and state SERA officials. Work will be under the direction of Robert M. Gregory, SERA construction supervisor.

Details for construction of the building were completed in San Francisco. It will be 228 feet long and 120 feet wide. Architecture will be of modern design, adapted from pre-historic southwestern architecture. The California atmosphere will be expressed in abundant displays of floral adornments and hanging vines, according to the exposition architect, Richard S. Requa.

LIBRARY PLANS FINISHED

Noble and Archie T. Newsom, Russ Building, San Francisco, have completed plans for a branch library building in the Glenview District, Oakland; also drawings for three, five-room Monterey-Colonial dwellings in the Merriwood Tract, Oakland.

« « « « With the Architects » » » »

ARCHITECTS ADVICE SOUGHT

Albert J. Evers, architect of San Francisco, has been appointed architectural advisor for Northern California by the Federal Housing Administration, Washington. Working under his direction are the following architects, also appointed by the Federal Administration:

San Francisco—W. C. Ambrose, J. K. Masten and Albert Winters.

Oakland—Chester H. Miller and Harris Allen.

Eureka—Newton Ackerman and Franklin T. Georgeson. Berkeley—Walter T. Steilberg, Louis M. Upton. Salinas—Chas. Butner. Palo Alto—Birge M. Clark, Henry C. Collins. Stockton—J. Upton Clowdsley, Peter Sala. Chico—Chester Cole. Redding—Clarence Dakin. Mill Valley—Walter C. Falch. Sacramento—Edward F. Flanders, Herbert C. Goodpastor, Frederick S. Harrison. Burlingame—James H. Mitchell, Wallace A. Stephen. Richmond—James T. Narbett. Monterey—C. J. Ryland. San Rafael—Norman W. Sexton. San Jose—Ralph Wyckoff.

In connection with Titles II and III of the Federal Housing Act, an architect's report is required on all existing properties submitted for loan insurance and on all plans offered for new buildings. The FHA requires plans and specifications up to the standard of architectural practice on all new structures proposed for loans.

CALIFORNIA COLONIAL RESIDENCE

Williams & Wastell, architects, 374-17th Street, Oakland, report that they are busier at the present time than for a period of five years. The most recent work to be turned out is a $20,000 home designed in the California Colonial style for M. J. Riese. It will be built on Spruce Street, in Berkeley. The same firm is at work on plans for a $75,000 country place in Sonoma County, in addition to several small homes in the Bay region.

LODGE BUILDING

Plans have been completed by Charles S. Dean of Sacramento, for alterations to the Odd Fellows Building at 9th and K Streets, Sacramento.

BERKELEY ARCHITECT BUSY

Edwin L. Snyder, 2101 Addison Street, Berkeley, reports being unusually busy with small house work. Besides several speculative homes for the Mason McDuffie Company, he has prepared drawings for a California-Colonial house in Thousand Oaks, Berkeley, for L. M. Hansen, a $4500 house in Highlands Terrace, for Robert R. Jones, a home in Piedmont Pines for C. H. Chesney, a residence for himself on Grizzly Peak Boulevard, Berkeley, and alterations and additions to the N. B. Drury house on Mendocino Avenue, in the University city.

CROCKETT SCHOOL WORK

Henry D. Dewell and Austin Wilmot Earl of San Francisco, are the structural engineers for some extensive remodeling and rehabilitation work to the high and grammar schools in Crockett, Contra Costa County. Structural changes will be made to all of the buildings to comply with the state earthquake act. Other work will include a new cafeteria building for the high school.

STORAGE PLANT AND SCHOOL

New work in the office of Masten & Hurd, architects, 233 Post Street, San Francisco, includes a pre-cooling station and ice storage plant at Placerville to cost $250,000, and a two-story reinforced concrete grammar school building for the City of San Francisco at 22nd and Bartlett Streets, San Francisco, to cost $180,000.

COLLEGE BUILDING

Allison & Allison, Edison Building, Los Angeles, have completed plans for a 30-room, two-story Physical Educational Building for men at the Los Angeles Junior College, Vermont Avenue, Los Angeles, the City of Los Angeles is the owner.

STUCCO RESIDENCE

Theodore Ruegg, 1515 Tyler Street, Berkeley, is preparing revised drawings for a $10,000 stucco dwelling to be built on Hilgard, near Leroy Street, Berkeley for Mr. Von Ellsworth.

ELMER GREY IS BUSY

Dear Mr. Editor:

In your next issue will you kindly correct an error which occurred in the last issue in connection with the re-publication of my *Pencil Points* article "Breaking into the Movies".

Your sub-heading states that my attempts to get into the movies were "unsuccessful". That is not a fact, and if you will look at the editorials in the front part of the same issue of *Pencil Points* you will see an article entitled "He got the Job" in which it is stated that I was successful.

Your main heading "Job Wanted" was misleading because it conveys the impression that I am badly in need of work, whereas, just at present I decidedly am not. In fact I have just had a wonderful "break". The movie job did not last long—the work petered out—but I have just recently received a commission to act as consulting architect on a small palace that will be built outside of the United States (in a country the name of which I am not at liberty to disclose). This job in itself will not only yield me enough to live on for quite a while, but also will take me on long jaunts by water to a remote shore and a perfectly lovely country.

So spread the glad news wide. The good times are coming back!

Yours truly,
ELMER GREY.

WINS COMPETITION

Sydney M. Gray, Stanford graduate and son of Dr. and Mrs. Henry David Gray of the Stanford English faculty, won an open competition for a design for a war memorial at Uniontown, Pa. Gray will receive his advanced degree in architecture from Columbia University this spring. He has been offered a position with a leading New York architectural firm.

TWO RESIDENCES

The office of W. W. Wurster, 260 California Street, San Francisco, has completed plans for two residences, one for John A. Sutro at Spruce and Jackson Streets, San Francisco, estimated to cost $50,000, and the other for Lawrence Scott at Paso Tiempo, near Santa Cruz. Mr. Wurster is also preparing drawings for a house near the McDuffie Estate in Berkeley for B. B. Heard.

ARCHITECTS TO HOLD EXHIBITION

The biennial exhibit of works of the Northern California Chapter, American Institute of Architects, will be held early in May. Honor awards for outstanding achievement will be made by a jury of Los Angeles architects. Photographs and drawings will be hung in the balcony of the Municipal Auditorium, San Francisco.

Exhibits will be confined to architectural conceptions that have been fulfilled and the jury will probably visit various completed structures before final awards are made.

The exhibit will later be moved to the War Memorial galleries continuing at the latter from June 15 to July 15, inclusive.

The last exhibition of the Northern California Chapter was held in the de Young Memorial Museum two years ago, attracting some 225,000 visitors.

THEATER ALTERATIONS

F. Frederic Amandes, 1879-18th Avenue, San Francisco, has completed plans and awarded a contract for extensive alterations to the Rialto Theater at 22nd and Mission Streets, San Francisco. Improvements will include redecorating, steam heating equipment, carpets, drapes, new lounge, mezzanine and foyer. The work will cost $40,000.

YACHT HARBOR AND BUILDINGS

Plans have been completed in the office of Willis Polk & Company, 277 Pine Street, San Francisco, for a yacht harbor and buildings at Sausalito for the Golden Gate Yacht Harbor, Inc. Albert von der Worth, is president of the project which involves an expenditure of about $350,000.

ENGLISH STYLE RESIDENCE

Albert Schroepfer has completed plans for a two-story frame and stucco English style residence to be built on Union Street, near Scott, San Francisco, for James Hanley. House will have eight rooms, two baths and double garage, slate roof, hardwood floors and gas furnace.

BERKELEY RESIDENCE

Plans have been completed by J. K. Ballantine, architect, 37 Harlan Place, San Francisco, for a $30,000 brick veneer residence to be built on the Tunnel Road, Berkeley, for Stanley Hiller.

TERMITE SURVEY IN SAN FRANCISCO

The termite menace has been given official notice by San Francisco City Administrator A. J. Cleary who is sponsoring an SERA project designed to find and eradicate these destructive wood borers. Headquarters for the survey have been established at 565 Folsom Street in one of the buildings which will later be demolished to provide the approach to the San Francisco Bay Bridge. Some of the structures to be razed for the construction of approaches to the Bay Bridge are to be used for full scale experiments with methods of eradication. Those taking part in the project will be given a preliminary course of instruction on the subject, using the wrecked buildings as a field laboratory. During the period of instruction activities will largely center at Rincon Hill. These technically trained workers will later spread out over the city, examining practically every timber structure. Particular attention will be given to foundation timbers and the supporting underpinning. Wherever termites are found householders will be notified and told how to get rid of them.

A. A. Brown, consulting engineer and an expert on termites, will cooperate with the Director of Public Works, William Worden, City Engineer John J. Casey, Assistant City Engineer, Clyde Healy and Erle Cope, Director of the Bureau of Building Inspection.

PERSONAL

William J. Bain, J. Lister Holmes, George Wellington Stoddard and Arthur L. Loveless recently joined with F. E. Voorhees, who will be manager, in forming Homes, Inc., for the purpose of facilitating the construction of small residences under the terms of Title II, National Housing Act. Office quarters have been taken at 901 Second Avenue, Seattle.

Victor N. B. Jones of McClelland and Jones, has returned to Seattle from a month's trip to San Francisco and Portland. In the Bay City he supervised an extensive remodeling job on Jerome's Store at 145 Geary Street. The work was done by the Mullen Manufacturing Company of San Francisco.

C. W. May, consulting engineer on heating, sanitation and air conditioning, has moved his Seattle office from the Orpheum Building to the Smith Tower.

Chester H. Aldrich, F.A.I.A., newly appointed Director of the American Academy in Rome, expects to enter on his duties there in September, of this year.

Miss Julia Morgan, architect of San Francisco, is expected home early in April from a three months trip abroad. Miss Morgan is reported to be much improved in health.

HOUSE PLANS EXHIBITED

Domestic architecture was reflected in an exhibition held the latter part of January in the Bon Marche Building, Seattle. Representative Seattle architects exhibited drawings, photographs and floor plans. Architecture students from the University of Washington displayed the results of ambitious academic projects. Interior decoration schemes were shown by art pupils from the Cornish School, and the Garfield, Franklin, Cleveland, and West Seattle High Schools.

Views of selected completed residences were exhibited by architects as follows: David J. Myers—Phillip G. Johnson residence at Woodbury Park, nine exteriors and three interiors; Bebb and Gould—James D. Hoge residence at The Highlands, five exteriors and three interiors; Arthur L. Loveless—Darrah Corbet residence, one exterior and two interiors; George Wellington Stoddard—H. M. Anderson residence at Broadmoor; J. Lister Holmes—series of studies for modernizing houses; Thomas, Grainger and Thomas—five modern exterior studies; Edwin J. Ivey—Home at The Highlands, dining room; Lake Washington residence, library.

Public buildings were represented by views of the new Law Building, U. of W., designed by Architect A. H. Albertson and Associates Joseph W. Wilson and Paul Richardson.

Herbert J. Philippi, recently of Random House, New York City, presented a series of models illustrating progressive modernizing of a house.

John T. Jacobsen offered "A Doll House," a student-day project, with interior decoration by George L. Davis. Other U. of W. graduates and students who exhibited projects and sketches were: Perry B. Johanson, Victor Steinbrueck, Merle McCann, A. Neise, A. Bugge, Barney Crews, J. Sproule and James P. Savidge.

Kenneth B. Anderson, U. of W. architecture graduate, displayed projects for a meterological station and a tennis court; Hal Foss of the same school offered plans for an architect's residence and studio.

1938 FAIR SITE CHOSEN

Yerba Buena shoals has been selected as the site for the 1938 World's Fair to celebrate completion of the Bay bridges. Selection was made by directors of the San Francisco Bay Exposition, Inc., after a six-month survey.

Formal action must now be taken by the San Francisco Board of Supervisors because the site lies within the city and county limits. The Federal Government also must approve use of the site because of navy activities on Yerba Buena island.

Officials of the Chamber of Commerce, Junior Chamber of Commerce, Down Town Association and other groups praised the selection, while those who favored the Lake Merced and South Basin sites, expressing disappointment, agreed all should work together to make the exposition a success wherever held.

Formal application will be made to the city as soon as possible to make the shoals available, said Leland W. Cutler, president of the exposition organization.

"Selection of Yerba Buena shoals follows an intensive study of all factors involved in the successful promotion of the exposition," Cutler said. "The directors were unanimously of the opinion that it offers the greatest possibilities for a successful exposition, from the standpoint of attendance and financial return."

JOHN G. McMILLAN

John Gilmore McMillan, formerly county surveyor in Santa Clara County, and a pioneer civil engineer in California, died in San Jose Thursday, February 14, at the age of 84.

Mr. McMillan was elected county surveyor in 1890 and served for twenty-four years, resigning in 1914 to join with his sons in a firm of consulting engineers.

The career which brought Mr. McMillan fame in railroad, highway and bridge engineering, grew from childhood ambition.

He was born in Rhode Island in July, 1851, and came to California with his parents four years later. As a child the construction work around the Feather river mines fascinated him. He decided to become an engineer.

He was elected county surveyor of Sutter county in 1876, serving two terms and winning a reputation that caused the Central Pacific and then the Southern Pacific to employ him in railroad construction. Later he went to Central America and built railroads there. Returning to the United States in 1885 he was employed as assistant engineer on construction of the old Market street cable railroad in San Francisco. In 1886 he resigned to become engineer of construction of Stanford university.

On completion of this job, after four years, he was elected Santa Clara county surveyor and during his administration he built the first concrete highway bridge in California. Mr. McMillan was the inventor of a bridge flooring that brought him considerable income at one time.

HARRY G. KOERNER

Harry G. Koerner, architect, died suddenly of heart failure at his home, 1462 South Wooster Street, Beverly Hills, February 27, aged 54 years.

On the day prior to his death Mr. Koerner had been the guest at a testimonial dinner given in his honor at the Victor Hugo Cafe, Beverly Hills, by the Little Theater group of that city. He had prepared preliminary plans for a Little Theater there.

Mr. Koerner was at one time with William J Gage under the firm name, Koerner & Gage. They were the architects for the Beverly Hills city hall, one of the notable structures of that city.

Mr. Koerner came to Los Angeles from Pittsburgh, Pennsylvania, where he was associated with Sidney F. Hecker, internationally known architect.

He was a Mason.

STANLEY P. KOCH

The death of Stanley P. Koch, Chief Building Inspector, City of Berkeley, occurred at his home in Berkeley March 4th of heart trouble. Mr. Koch had been identified with the Berkeley building department since 1927. He was an architect as well as an engineer and for three years was associated with W. H. Ratcliff, Jr. Under his guidance the Berkeley building department gained a reputation of being one of the most thorough in the state. Both state and local building laws were rigidly observed. Mr. Koch was a graduate of the University of California and a member of the first class in architecture to be graduated in that institution. He was 48 years of age.

A. L. Brinckman has been appointed acting head of the department by City Manager Hollis Thompson.

OAKLAND-SAN MATEO DWELLINGS

Chester H. Treichel, 696 Cleveland Avenue, Oakland, has completed plans and awarded contracts to Jensen & Pedersen for two dwellings, one in Oakland for John Peters costing $10,000 and the other in Baywood, San Mateo County, for Howard L. Stillwell to cost $14,000.

Chapter and Club Meetings

SOUTHERN CALIFORNIA CHAPTER

Assembly Bill No. 679 and reports of the Federal Housing and Better Housing committees, were discussed at the regular monthly meeting of Southern California Chapter, American Institute of Architects, held at the Clark Hotel, Los Angeles, February 12.

Assembly Bill No. 679, introduced at this session of the legislature by Assemblyman Nielsen, provides for the repeal of Section 363N of the Political Code, which permits the state entering into contracts with architects to prepare plans for public buildings. The Chapter adopted the following resolution, opposing the enactment of this bill into law and instructing the secretary to forward copies of the resolution to various civic and trade organizations:

WHEREAS, Assembly Bill No. 679 introduced at this session of the State Legislature, provides for the repeal of Section 363N of the Political Code; and

WHEREAS, The said section permits any department or division of the state, with the approval of the Department of Finance, to enter into contracts with duly qualified architects to prepare plans for public buildings or other structures; and

WHEREAS, The repeal of the said section 363N of the Political Code would make it impossible to employ duly qualified architects in private practice on buildings constructed by the state; and

WHEREAS, architects resident in this state have secured honorable recognition for their ability in design not only in this state and nation but in several foreign countries, and

WHEREAS, The state should be able at any and all times to avail itself of the services of the best qualified architects in the state and country to design, supervise and take charge of its building programs. Therefore be it

RESOLVED, That we the members of the Southern California Chapter of the American Institute of Architects, in the interest of governmental economy and with a view of preventing Governmental Bureaus supported by taxpaying public from competing with private business, would request your support in defeating Assembly Bill 679.

Reporting on the progress of plans for the Federal Housing Exposition building, Samuel Lunden stated the banks had underwritten their quota of the fund necessary to finance the structure and that only one group had reported unfavorably on underwriting.

George Adams, chairman of the Chapter's housing committee, reported architects' leads coming through in better shape as a result of the work of SERA canvassers, who have completed about 60 per cent of their campaign.

A vote on proposed amendments to Chapter by-laws, as recently approved by the executive committee, was deferred until the March meeting due to the lack of a quorum. Paul T. Frankl, discussed the problem of how to approach the contemporary movement in art in its various aspects.

NORTHERN CALIFORNIA CHAPTER

The regular monthly meeting of Northern California Chapter, A.I.A., was held at the Plaza Hotel, San Francisco, at 6:30 P.M. Tuesday, January 29, President Albert J. Evers, presiding.

The minutes of the previous meeting were approved as published.

Mr. Ballantine, chairman of the exhibit committee, presented plans under consideration for the honor award exhibit in the Civic Auditorium, May 4-12, in conjunction with the Building Exposition and Convention, with a more extended showing afterward in other suitable places. Entry fees and participation were discussed. Mr. Donovan moved acceptance of the report and authorized the committee to act in accordance with its judgment. The motion was unanimously carried.

Mr. Jacobs, chairman of the building laws committee, reported on the history of the Uniform Building Code and its present status. Mr. Evers expressed appreciation of the ceaseless effort of the committee to perfect the Code.

Thanks was extended to the program committee for its assistance to the Producers' Council Club in its Christmas jinks.

Mr. Evers reviewed the discussion in the November meeting upon the practice of the electrical contractors who appear to be in collusion to control prices and distribute work to their satisfaction. Following his report of the action taken by the Chapter's committee, a motion by Mr. Donovan to approve the action and leave the matter in the hands of the President was carried without dissent.

Mr. Johnson reported upon Assembly Bill No. 679 by which all architectural work for the state would automatically be prepared only by the

Division of Architecture of the Department of Public Works. A motion by Mr. Donovan, authorizing the board of directors to join with the State Association in resolution to combat this legislation and to call upon other branches of the building industry to oppose it, was unanimously carried.

The election of Messrs. Farlow and Weihe to Institute membership was announced by Mr. Evers with appropriate recognition of their new status.

Mr. Maury requested information relative to the eligibility of twenty-five foot lots for underwriting by the FHA. Mr. Evers stated that inasmuch as this distinctly relates to San Francisco only, it becomes a matter for the San Francisco Society of Architects to handle. Mr. Donovan moved and it was so carried that the Chapter urge the Society to investigate and make recommendation, with authorization to the board of directors to approve.

With the conclusion of business, Mr. Jeans told of his recent travels and sojourns in European countries. Impressions and experience were very interestingly related while he showed many delightful and alluring water-color sketches made during the trip.—J.H.M.

OREGON CHAPTER ANNUAL MEETING

The 23rd annual meeting of Oregon Chapter, A.I.A., was held at the University Club, Portland, January 15. Reports of committees were read and accepted.

Mr. Parker announced that he is a member of the committee appointed by the Chamber of Commerce to consider the removal of the Skidmore Fountain to another location, and offered the following resolution:

Whereas certain persons have recently suggested removal of the Skidmore Fountain to another site, and these suggestions are apparently accepted as worthy of consideration, therefore, be it

Resolved, that the Oregon Chapter, American Institute of Architects, hereby reaffirms its opposition to removal of the Skidmore Fountain because (1) the location, utilized by the designers as an integral part of their conception, remains a perfectly harmonious setting, as when the work was created, (2) to remove the fountain would not only destroy a vital part of its significance but also offend the decencies of art, tradition and common sense, and (3) its location in the city plan is superb, considering possible developments on the waterfront,—attention to which is recommended as a more constructive subject for study than proposals to tamper with the noble work of another generation.

The resolution was adopted as the sentiment of the Chapter, and Mr. Parker was authorized to so inform his committee.

The next order of business was the election of officers for the year 1935 and also personnel of the Jury of Awards for 1935. Those nominated were:

President, Fred Aandahl; Vice-President, Leslie D. Howell; Secretary, C. H. Wallwork; Treasurer, Herman Brookman; Trustee, Jamieson Parker.

For jury of honor award the following were named; George Jones, Kenneth Legge, Roi Morin, Morris H. Whitehouse, with the president as chairman.

Mr. Herzog moved that the secretary be instructed to cast a unanimous ballot for the slate nominated by the nominating committee. Seconded and carried.

President Aandahl then took the chair.

Mr. Stanton moved that the greetings of the Chapter be sent to Mr. Purcell, and President Aandahl requested Mr. Stanton to write the greetings for the Chapter.

The meeting then recessed for the cocktail hour, followed by dinner.

Toastmaster Doty was in his usual good form, and the speeches showed careful preparation and profound knowledge of the subject. The inspiring talk by Mr. Brookman will long be remembered and was especially noteworthy due to his able handling of a highly technical subject, in an interesting manner.

Mr. Church moved that the Chapter appropriate $10.00 to help pay for clerical service at Salem in connection with the proposed amendment to the Architect's Registration Law. Seconded and carried.

Messrs. Whitehouse and Whitney, charter members of the Chapter, gave brief talks.

Mr. Whitney led the discussion in reference to the proposal to fix the hours of labor to 30 hours per week. Mr. Johnston moved that the Chapter is opposed to any action that will increase the cost of building at this time, and that Mr. Whitney be authorized to make same known to his committee. Seconded by Mr. Tucker and carried.

President Aandahl expressed the welcome of the Chapter to the guests, who responded fittingly.

The recently announced competition by the General Electric Co. was discussed. It was moved, seconded and carried that the competition committee study the program with power to act

should they find the program unethical.

Mr. Aandahl, new president of the Chapter, has announced the following committees:

Public works—Jamieson Parker, chairman; Ormond R. Bean, Morris H. Whitehouse and Dean R. E. Wright.
City and regional planning—H. A. Whitney, chairman; Pietro Belluschi, Hollis E. Johnston and Kenneth C. Legge.
Legislation—Walter E. Church, chairman; Clifford E. Claussen, Francis Jacobberger and W. C. Knigbton.
Public information—Harold Doty, chairman; Wyman K. Bear, Harry A. Herzog and Frank Roehr.
Building laws—W. G. Holford, chairman; Fred S. Allyn, George H. Jones and F. T. Weber.
Education—Glen A. Stanton, chairman; E. N. Newberry, Ernest F. Tucker and W. R. B. Willcox.
Entertainment—John Schneider, chairman; Carl L. Linde, Thayne J. Logan and F. Lea McPike.
Exhibition—Roi Morin, chairman; Herman Brookman, Linn Forrest and Harold D. Marsh.
Membership—Richard Sundeleaf, chairman; J. W. De Young, Roscoe Hemenway and Clarence H. Wick.
Professional practice and competitions—William H. Crowell, chairman; Leslie D. Howell, C. D. James and Jamieson Parker.
Special committee on honor awards—Fred Aandahl, chairman; G. H. Jones, Kenneth C. Legge, Roi L. Moran and Morris H. Whitehouse.

SANTA BARBARA CHAPTER

THE Santa Barbara Chapter, A.I.A., had for its guests at a recent meeting, Messrs. Tom Storke and Louis Lancaster.

President Crawford turned the meeting over to Russell Ray, primarily for NHA business and Mr. Ray gave a brief outline on the progress of the model house. After a general discussion it was suggested that the Chapter act as architect for both the remodeled model house and the new model house. The method of organizing a suitable program and the establishing of a fee for architectural services in connection with the model houses was generally discussed. The main point that needed a solution was, should the services be donated or should the regular fee be charged?

It was moved by Mr. Burket that the Chapter appoint a committee to prepare a competition program for a model house. It was amended by Mr. Howell that the architects gamble their services in connection with same. The motion with the amendment, carried. President Crawford then appointed Messrs. Lockard, Soule, and Armitage on the committee, with Mr. Lockard as chairman.

President Crawford invited the Chapter to Santa Maria for its next regular meeting.

WASHINGTON STATE CHAPTER

Modern housing problems and architects' fee schedules were to be discussed at the monthly dinner meeting of the Washington State Chapter, Thursday, Feb. 14, at the New Washington Hotel, Seattle.

Sketching competition entries were due Feb. 18 either with George Gove, Puget Sound Bank Building, Tacoma, or with Arnold Campbell, Hoge Building, Seattle.

CONTRACTORS MEET

Promotion of construction and prevention of legislation unfavorable to the building industry was among the interesting topics of discussion at the annual meeting of Central California Chapter, Associated General Contractors, held in San Francisco in February.

The meeting was held at the Engineers' Club, 206 Sansome Street, and was followed by a dinner.

The meeting also discussed the problem of employing SERA workers. William E. Hague, in his annual report, said if the SERA day labor program is allowed to substitute the contract system, it will practically put contractors out of business.

PACIFIC COAST CHAPTER, A.S.L.A.

The Pacific Coast Chapter, American Society of Landscape Architects, took a very prominent part in the exhibition and lectures held last month under the auspices of the Los Angeles Art Association. The Chapter contributed both exhibition material and speakers.

* * *

The Pacific Coast Chapter is also co-operating with the Art Association to the end that they plan a second exhibit in June of this year that will deal more particularly with public buildings and parks:—and a later exhibit that will consider landscape architecture as a fine art, treating it in a broader and less specialized way than the first two exhibits. It is the hope of both the Association and the American Society of Landscape Architects, through illustrations, lectures and published material, better to acquaint the public with the true values of landscape architecture as both a practical and a fine art.

* * *

Recent elections of the Pacific Coast Chapter, American Society of Landscape Architects, have placed the following men in office for the current year:

President — Ralph D. Cornell, Los Angeles; Vice-President—J. W. Gregg, Berkeley; Secretary — Edward Huntsman-Trout, Los Angeles; Treasurer—Russell McKown, San Francisco.

The Executive Committee consists of L. Deming Tilton, State Building, San Francisco and George Gibbs, Palos Verdes Estates.

GRANTED CERTIFICATES

At a recent meeting of the California State Board of Architectural Examiners, a provisional certificate to practice architecture in the State of California was granted to the following: Fred J. De Longchamps, Gazette Building, Reno, Nevada, and Wm. E. Foster, 206 Pacific Ave., Piedmont.

FLAT BUILDING

A two-story frame and stucco flat building will be erected on 14th Street, near the Labor Temple, San Francisco from plans by C. O. Clausen, 746-46th Avenue, San Francisco. John Bjorkman, is the owner and builder.

ARCHITECTS ASK STATE LEGISLATURE TO AMEND FIELD ACT

Below will be found a digest of bills introduced in the 1935 California State Legislature, having to do with architecture, engineering and building construction. The synopsis was prepared by Robert H. Orr, chairman of the Legislative Committee of the State Association of California Architects:

Senate Bill, No. 507, by Mr. Pierovich

An act to amend Section 5 of, to add Sections 1a and 1c to, and to amend and renumber Section 1 to be Section 1c of an act entitled "An act to regulate the practice of architecture" approved March 23, 1901, as amended.

Since introduction of this bill there has been held a joint meeting of the Legislative Committees of the Northern and Southern Sections (State Association of California Architects), which agreed to change in some particulars of the wording of the bill, but not its general substance. (Referred to Committee on Government Efficiency).

Assembly Bill, No. 166, by Mr. Chatters

An act to amend section 1 of an act entitled "An act relating to the safety of design and construction of public school buildings, providing for regulation, inspection, and supervision of the construction, reconstruction or alteration of or addition to public school buildings and for the inspection of existing school buildings, defining the powers and duties of the State Divison of Architecture in respect thereto, providing for the collection and disposition of fees, prescribing penalties for violation thereof and declaring the urgency of the act to take effect immediately," approved April 10, 1933 (Field Act), relating to the buildings and work subject to the provisions of said act.

The purpose of this Bill is to vest in the State Department of Public Works, Division of Architecture, all school house construction if the cost of the school building or reconstruction exceeds the sum of $5,000, and defines the term "school building." (Building and Construction).

Assembly Bill, No. 666, by Mr. Latham

An act to authorize low cost housing projects organized under the Limited Dividend Housing Corporations Act to comply with and take advantage of the National Housing Act, and amending the Limited Dividend Housing Corporations Act.

Adding two new sections to "Limited Dividend Housing Corporations Act" with reference to making loans, investing funds, paying dividends and the use of fees charged by the Commission. (Building and Construction).

Assembly Bill, No. 679, by Mr. Nielsen

An act to repeal section 363n, of the Political Code, relating to State contracts for architectural services.

Section 1. Section 363n of the Political Code is hereby repealed. (Building and Construction).

Assembly Bill, No. 753, by Messrs. Lore and Phillips

An act to amend section 4 of "An act to regulate the construction of buildings in the State of California, in respect to resistance to horizontal forces, providing penalties for the violation thereof and providing that this act become effective immediately," approved May 26, 1933 (Riley Act), relating to the application of said act.

This act is for the purpose of exempting, dwellings and farm buildings, not intended primarily for occupancy by human beings from the provision of resistance to horizontal forces. (Building and Construction).

Assembly Bill, No. 873, by Mr. Patterson

An act to amend section 6.30 of the School Code, relating to bids for contracts.

Requires that Board of School Trustees and City Boards of Education shall let all contracts or expenditures of $500 or more to the lowest bidder or else reject all bids. (Education).

Assembly Bill, No. 1114, by Mr. Wright

An act to amend Article VII of Chapter II of Part IV of Division II of the School Code, relating to the Division of Schoolhouse Planning.

This is a skeleton bill, the text is not given. (Governmental Efficiency and Economy).

Assembly Bill, No. 1245, by Mr. Field

An act to provide for the granting of assistance to school districts for the inspection, repair, reconstruction, replacement, alteration or erection of buildings.

Creates a Board of School Building Construction consisting of Director of Education, Director of Finance, State Controller, Director of Public Works and the Chief of School House Planning, of the State Department of Education, granting power to provide funds for construction, repair, reconstruction, replace or alter buildings where under the existing provisions of law the district cannot raise sufficient funds to do these things, and to purchase school bonds legally issued by a district which cannot be sold upon the market. (Governmental Efficiency and Economy).

Assembly Bill, No. 1475, by Mr. Clark

An act relating to the powers and duties of building inspectors of cities, cities and counties, or counties.

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FACTORY ASSEMBLED ▾ PRECISION FITTED

Automatic AWNING TYPE Windows

Shipped ready to install! Ready to provide the best of controlled illumination and draftless all-weather ventilation. Made in one, two, and three-sash units. Multiple sash fully automatic . . . all vents operated collectively by motion of lower sash, which disconnects for independent operation, and reconnects without use of manually operated clutches.

Write for Details and Architect's Specifications

WHITE PINE SASH CO. - - SPOKANE, WASH.

Manufacturers of Precision Sash and Frames for 25 Years.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Owing to the various crafts accepting the NRA code of fair competition, in some cases they have adopted a schedule of prices, and it therefore would be advisable to get in touch with these firms direct.
Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor. Lumber prices slightly lower.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—
Common, $35 to $40 per 1000 laid, (according to class of work).
Face, $75 to $90 per 1000 laid, according to class of work).
Brick Steps, using pressed brick, $1.10 lin. ft.
Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)
Brick Veneer on frame buildings, $.75 sq. ft.
Common, f. o. b. cars, $15.00 job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126..00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots).

8x12x5½	$ 94.50
6x12x5 ½	73.50

Discount 5%.

Composition Floors — 18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers) — Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bnkrs.	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month. following delivery.

SAND
Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f. o. b. Lake Majella), $2.75 to $4.00 per ton.

Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b.) Job. S.F.) $2.90 per bbl.
Cement (f.o.b. Job, Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Calaveras White . . . $6.00 per bbl.
Medusa White . . . . . $8.00 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place, exclusive of forms, 30c per cu. ft.
4-inch concrete basement floor.....12½c to 14c per sq. ft.
4½ inch Concrete Basement floor .....14½c to 16c per sq. ft.
2-inch rat-proofing....6½c per sq. ft.
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—
Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Meduca Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—
Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—
Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 75c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.
Note—Add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$33.00 per M
No. 2 common	27.00 per M
Selection O. P. common	37.00 per M
2x4 No. 3 form lumber	17.00 per M
1x4 No. 2 flooring VG	48.00 per M
1x4 No. 3 flooring VG	42.00 per M
1x6 No. 2 flooring VG	48.00 per M
1¼x4 and 6, No. 2 flooring	52.00 per M

Slash grain—

1x4 No. 2 flooring	$39.00 per M
1x4 No. 3 flooring	34.00 per M
No. 1 common run T. & G.	30.00 per M
Lath	5.00 per M

Shingles (add cartage to prices quoted)—

Redwood, No. 1	$ 1.00 per bdle.
Redwood, No. 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.
1 1-16x2¼" T & G Maple	132.00 M ft.
⅞x3½ sq. edge Maple	140.00 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—
O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.
Screen doors, $4.00 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.
Dining room cases, $7.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.
For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 29c per yard
Three-coat work .....40c per yard
Cold Water Painting .....10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. keg s,net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00	lineal foot
8-inch	1.50	lineal foot
10-inch	1.75	lineal foot
12-inch	2.00	lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish No. 18 gauge wire mesh	1.50
3 coats Medusa finish No. 18 gauge wire mesh	2.00
Wood lath, $5.50 per 1000.	
2.5-lb. metal lath (dipped)	.17
2.5-lb. metal lath (galvanized)	.20
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.28

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks, Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware. $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile — Floor, Wainscot, Etc. — (See Dealers).

7 Reasons...

Lumber pressure-treated with

REILLY TRANSPARENT PENETRATING CREOSOTE

is the best lumber for every structural purpose

1. It is immune to attack by TERMITES AND DECAY.
2. It retains its structural characteristics...is not changed in form or color.
3. Is dry . . . not oily.
4. Presents no health hazard.
5. Can be painted or varnished.
6. Is suitable for the most exacting uses in any building.
7. It is PERMANENT.

The Ideal Building Material

STRENGTH, BEAUTY AND ECONOMY are the natural characteristics of wood. Add to these the quality of PERMANENCE and you have the perfect structural material.

Lumber pressure-treated with REILLY TRANSPARENT PENETRATING CREOSOTE is permanently protected against decay and insects without changing its desirable natural characteristics, color, non-oiliness and paintability.

Be sure that the lumber specified on your jobs has been pressure-treated with REILLY TRANSPARENT PENETRATING CREOSOTE. Look for our Trade-Mark

BUILD FOR PERMANENCE

Reilly COAL TAR PRODUCTS

REILLY TAR & CHEMICAL CORPORATION

1201 ARCHITECTS BLDG., LOS ANGELES, CALIF.
461 MARKET ST., SAN FRANCISCO, CALIF.
455 CENTRAL BLDG., SEATTLE, WASH.

SPECIFY **drinking fountains** for installation **at the time the building is erected**—a health-giving, money saving necessity for your clients!

"Model 2H4 for lavatories."

HAWS manufacture a complete line of drinking fountains and faucets — a model for every requirement.

Fountains in colors too!

HAWS SANITARY DRINKING FAUCET CO.

1808 HARMON STREET . . . . BERKELEY

Defines "Building Inspector," makes it unlawful to accept for checking any plan, design or specification submitted for a building permit if said plan, design or specification has been prepared by any person violating "An act to regulate the practice of architecture" or "an act to regulate the practice of civil engineering." (County Government).

Assembly Bill, No. 1668, by Mr. Cunningham

An act regulating the practice of architecture, civil engineering, and land surveying by officers, or employees, of the State of California, or of any county, city and county, city, town, school district road district, drainage district, levee district bridge district, sanitary district, water district, irrigation district, utility district, or other improvement district of any kind, thereof, or any other political division thereof, or of any public corporation thereof which has the right to levy taxes, or assessments which may be collected as taxes, or of any public corporation thereof whose revenue is derived either in whole or in part from public funds which have been collected as taxes.

Limits the practice of architecture, civil engineering or land surveying to those licensed as such who are engaged in public service. If their official duties are for occasional or part time, they may engage in general practice but cannot use equipment that has been purchased at public expense.

For full time employment special leave of absence granted without pay, then said person may act as a consultant in his professional capacity and provides for the suspension or revocation of certificates for violations of this act. (Judiciary).

Assembly Bill, No. 1833, by Mr. O'Donnell

An act to amend an act entitled "An act to regulate the construction of buildings in the State of California, in respect to resistance to horizontal forces, providing penalties for the violation thereof and providing that this act becomes effective immediately," approved May 26, 1933, relating to construction of buildings.

This bill has been introduced in skeleton form and may be intended to modify the Riley Act. (Building and Construction).

Assembly Bill, No. 1835, by Mr. O'Donnell

An act to amend an act entitled "An act relating to the safety of design and construction of public school buildings, etc.," approved April 10, 1933 (Field Act), relating to the regulation and inspection of the construction of public school buildings.

This bill has been introduced in skeleton form and may be intended to modify or repeal the Field Act. (Building and Construction).

Assembly Bill, No. 1877, by Mr. Latham

An act to add a new section to the School Code to be numbered 6.53, relating to the duties, powers and liability of governing boards of school districts and members thereof in connection with school district buildings.

Provides that when a school building has been found upon examination by the Division of Architecture, State Department of Public Works or a licensed Structural Engineer to be unsafe, and no funds are available for reconstruction or replacement, or the school district refuses or fails to vote the necessary funds by a bond issue or special tax for such purposes, no member of the governing body of the school district shall be held personally responsible for the continued use of the building. (Education).

Assembly Bill, No. 2148, by Mr. Turner

An act to amend sections 1, 2, 3, 4 and 7 of an act entitled "An act relating the safety of design and construction of public school buildings, etc.," approved April 10, 1933 (Field Act), relating to the duties of the State Division of Architecture.

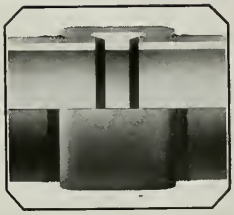
Vests in the Division of Architecture, State Department of Public Works authority at the request of any county, city or county, the construction of any new school building to be used for elementary, secondary and junior college purposes, estimated cost of which exceeds $1000, or to construct, reconstruct, alter or add to by the state or by any county, city, city and county or by any political sub-division, school or junior college district of any kind within the State and makes it the duty of the Division of Architecture to pass upon all plans for school house construction when the division has been requested by the county to make such approval. (Governmental Efficiency and Economy).

BOTTLED WATER MUST BE CLEAN

To compare city water with bottled water, the Los Angeles Department of Water and Power recently took samples in office buildings. Both city and bottled water were analyzed, and the bottled samples averaged 1,725 bacterial count per cubic centimeter, against 55 for the city water.

These results were published in the pamphlet that goes out every month with water bills, to

Have you considered DUROLINE PIPE for hot and cold water lines?



Section of National DUROLINE Pipe coupling and joint. (Note special highly corrosion-resistant joint compound on end of pipe and on threads.)

More and more Duroline Pipe is being used for hot- and cold-water supply lines in public buildings, hospitals, schools and residences. Numerous service tests and increasing installations the country over are proving its worth for actually *preventing* corrosion. The highly improved Duroline cement lining was developed for the very purpose of eliminating any corrosion resulting from waters and certain solutions that attack unprotected pipe metal. Duroline Pipe, therefore, merits the careful consideration of architects, engineers, and contractors in the building trade. Where it is used, corrosive waters never touch the pipe metal and no destructive action takes place. Absolute freedom from interior corrosion and tuberculation is obtained, together with all the other desirable features of NATIONAL Steel Pipe. And remember, the extra cost of this pipe is nominal—just a trifle higher than galvanized pipe. A bulletin describes in detail the development and advantages of Duroline Pipe. Write for it today!

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MONEL METAL
[*High Nickel Alloy*]

is the accepted material for soda fountains and lunch-room equipment, just as it is the universal metal for food service equipment in leading hotels and restaurants throughout the country.

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CORROSIRON
[*Acid Resisting Iron*]

is the accepted material for draining waste lines. CORROSIRON meets all State and Municipal specifications for drain lines from school laboratories and chemistry rooms.

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BUILD WELL~

A PROPERLY designed and well built building is a credit to any city and a worth while investment for its owner.

Such structures are the STANDARD OIL BUILDING, MATSON BUILDING, FOUR-FIFTY SUTTER STREET, STOCK EXCHANGE, S. F. BASE BALL PARK, MILLS TOWER, OPERA HOUSE and VETERANS' MEMORIAL, San Francisco, and other notable structures—all built or supervised by —

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Standard Oil Building, San Francisco | 605 W. Tenth Street, Los Angeles

show that city water is safe.

Good spring or distilled water may be low in bacterial count when put into a bottle, but be contaminated by faulty methods in cleaning bottles or handling, or by dirty ollas and coolers.

To make a good product in this industry, like every other, is one thing, and to deliver it in good condition is another.

City water is under constant chemical supervision, and bottled water should likewise be supervised, and chemically and bacteriologically tested.—Chemistry and You.

CITY ARCHITECT DESIGNS NEW TYPE SCHOOL WINDOW

A study of the plans and specifications for San Francisco's new George Washington High School, now under construction at Anza Street and Thirty-Second Avenue, from plans by Timothy L. Pfleuger and J. R. Miller, architects, indicates that not only will this be one of the most beautiful and pretentious high school buildings in the West, but that it will also mark a new era in school ventilation and school property protection.

The latter of these achievements is accomplished by the use of a new highly improved awning type window, developed in San Francisco under the guidance and encouragement of prominent local school architects. It is stated that the improved window was named Dalmo-Sawyer-Design Combination Window in tribute to City Architect Sawyer, because of the splendid service he contributed to its development, without any commercial interest and no motive other than his own untiring professional zeal. Discussing the new type window an official of the Dalmo Sales Corporation said:

"A brief review of the history of awning type windows reveals the extent and importance of improvements embodied in the new Dalmo-Sawyer design, and how the leadership of San Francisco's progressive architects brought about these improvements after initiating a nation-wide vogue for awning type windows.

"Originated in San Francisco in 1912 by A. C. Soule of the Simplex Window Company and Frederick Hauser of the Hauser Window Company, the awning type window quickly attracted the attention and support of California's leading school designers because its weather-tight fit, ease of cleaning, and insurance-reduction value made it obviously superior to casement or double-hung windows for school construction. In 1914, scarcely two years after its initial appearance, it was adopted by the San Francisco Board of Education and Department of Public Works, with whom it has been standard ever since.

"Its practicability proven, its real progress then began. Window pole operation of each sash individually by hand became obsolete when the window's originators perfected "gang control" which made the lower sash the manual of operation, and simultaneously provided for operating the lower sash independently with the two top sash open, by throwing clutch release levers which disengaged the traveling bar from the fixtures on the sash.

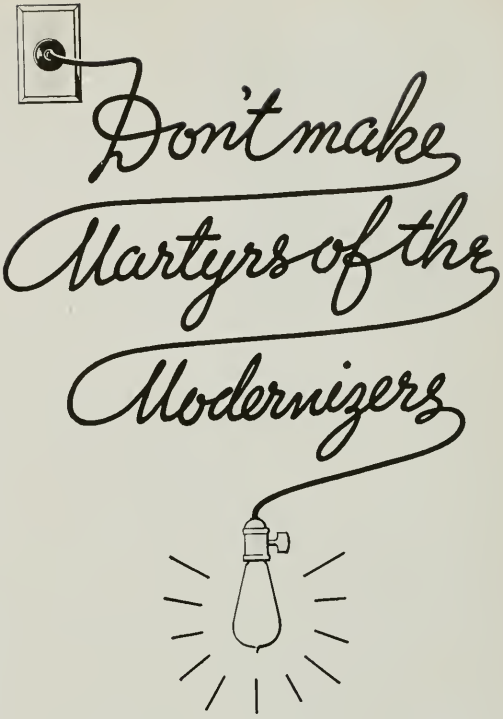
Shortly thereafter, in recognition of these important improvements, California adopted the window as standard for school construction within the state. Following this convincing endorsement, school architects throughout the entire nation gradually became interested and convinced and awning type windows of San Francisco design and manufacture were specified and used in ever increasing number on the finest educational edifices in America, rapidly becoming a universal mark of identification for modern schoolhouse construction.

"Then, in 1930, began the series of significant events which resulted in development of the special San Francisco form of awning type sash known as the Dalmo-Sawyer-Design Combination Window.

"City Architect Sawyer, in that year, issued simultaneously to all manufacturers of awning type windows, an edict that these windows could and must be better adapted to serve San Francisco's own schools. He pointed out the weather peculiar to this city and the nation wide increase in petty thievery, demanding that manufacturers produce a window which would afford improved protection to the health of San Francisco school children and the safety of San Francisco school property.

"Nor was he content merely to command that this important but difficult task be done. Long a student of awning type windows he called in these manufacturers, and told them exactly how such a window should operate to serve San Francisco schools most effectively and economically. Having no commercial interest in any window establishment, he gave the same assistance and recommendations to all such manufacturers, that they might have equal opportunity, and developments be speeded by competitive endeavor.

"Despite the admitted value and practicability of Mr. Sawyer's suggestions, of the many manufacturers with whom he talked only the Hauser Window Company and the Dalmo Manufacturing Co. seemed to answer the needs of the department. The subsequent death of Frederick Hauser, head of the first of these two interested companies, left only Dalmo Manufacturing Co. to aid Mr. Sawyer in developing a satisfactory window.



Since the inception of the Federal Housing Act much has been said of *modernization.*

Have you, Mr. Architect, given your clients a modernized electrical wiring job that is really modern? Or are your clients martyrs to inadequate lighting, trailing extension cords and the lack of convenient facilities for using electrical appliances. Are they still using antiquated methods of cooking and water heating?

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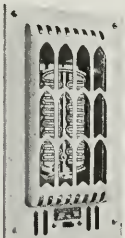

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"The difficulty of the problem was further increased by the fact that Mr. Sawyer had conceived a window so superior to any awning type sash then available, that it had to be re-engineered completely. In all truthfulness it may be said that San Francisco's new school buildings, insofar as windows are factors, will be the best ventilated and best protected schools in the United States.

"The many advantages of the new window were adjudged so important that the city architect's office took action to have it specified not only on the new George Washington High School, but also on the following other new schools: Marina Junior High School at Fillmore, Bay, and Chestnut Streets, George W. Kelham and William P. Day, architects; Lawton school, between Kirkham and Lawton, Thirtieth Avenue, Dodge A. Riedy and Chas. E. J. Rogers, architects; Glen Park School at Bosworth, Lippard and Brompton Streets, Lewis P. Hobart and Bliss & Fairweather, architects; Visitacion Valley school, Schwerin Street, between Visitacion and Leland Streets, Hyman & Appleton and G. Albert Lansburgh, architects; Sunshine Buena Vista school, Florida, between Twenty-Fourth and Twenty-Fifth Streets, Martin J. Rist, Chas. Strothoff, Smith O'Brien, and Albert Schroepfer, architects; Francis Scott Key school, Kirkham, between Forty-Second and Forty-Third Avenue, Wm. Mooser, Edw. A. Eames, and Douglas D. Stone, architects; Patrick Henry school, Vermont and Eighteenth Streets, Wilbur D. Peugh and Gardner A. Dailey, architects.

"According to school authorities the new windows will give these buildings the combined advantages of awning type and projected type windows, which, briefly summarized are: more effective ventilation and illumination, increased protection against weather, greater security against forced ingress, more flexibility in operation, and easier more economical cleaning.

"Although each window comprises three sash it provides the alternative of three-sash or two-sash ventilation. The center sash, occupying more than half the entire vent area, operates independently, permitting its use closed for weather protection while upper and lower sash are utilized for ventilation, or open at any desired angle to augment ventilation provided by upper and lower sash. It is completely reversible to expedite cleaning. Hinged at the bottom, the in position of the lower sash deflects cold air upward, achieving draftless overhead ventilation. The lower sash is also manual of operation for the upper sash so that the two operate in unison. The latter, however, is hinged at the top so that its out position will break the force of winds and thereby prevent overhead drafts.

"Of even greater interest and importance, perhaps, is a feature heretofore almost entirely neglected in school windows—a method of positive locking. At Mr. Sawyer's suggestion, a new Cremone bolt was designed which simultaneously locks the lower sash at both sides and the middle sash at the center. An optional arrangement is a latch handle, locking the lower sash to the middle sash and two side locks for the middle sash, operated by a key provided. Both Cremone bolt and latch handle have integral shade pulley."

"MODERNIZE MAIN STREET"

"Main Street" in America comprises more than 1,500,000 stores, shops, garages, offices, places of business of every kind. It is probably the ugliest thorofare in the land. Step into any cross section of it, in almost any town, and it presents a sullen, nondescript panorama of architectural disharmony, its exterior unpainted, time-worn, often dilapidated, its interior equipment in large part inadequate and out-dated. The street itself in many stretches is poorly lighted and its paving badly in need of repair. Nearly every creaking artery of it cries for remodeling, renovation, modernization.

The last report of the United States Census Bureau allocated the million and a half business places along "Main Street" approximately as follows:

Food	482,000
Automotive	257,000
Restaurants	134,000
Apparel	114,000
General Stores	104,000
Household	59,000
Drug Stores	58,000
General Merchandise	55,000
Lumber and Building	53,000
Second Hand Stores	15,000
Miscellaneous Retail Outlets	210,000

The National Dry Goods Association estimates that the number of retail outlets in small towns throughout the country which need modernization is about 75 per cent. A relatively small number have thus far undertaken any substantial improvements since the depression set in. Business is better, but retail merchants are still uncertain about the recovery, and are holding back improvements to their places.

The *Dry Goods Economist* gives a similar picture, estimating that nine out of ten retail stores need modernizing, that little or no money has been spent in the last five years for this purpose. They add that those stores which have modernized have invariably outdistanced competitors.

Drug Topics reports that nearly all the smaller drug stores in the land need improvements or remodeling of one kind or another.

All three of these authorities indicate that the loan facilities under the Federal Housing Act should prove a great boon to retail merchants, and say that the extent to which they can be made to take advantage of them depends on the salespressure brought to bear upon them. The vast majority of retailers would be helped by loans of as little as $2,000, the maximum now provided by the Act. However, a bill is now in Congress to raise the limit to $50,000 and is expected to be enacted.

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HOUSING PICTURES

Talking motion pictures explaining the work of the Federal Housing Administration in entertaining style are now being arranged. Under the plan a series of pictures, each from 600 to 900 feet in length, will be available to Better Housing committees, free of cost, on or before April 1.

One of the first steps taken in considering this project was a form letter sent to 13,500 motion-picture theaters throughout the country. This letter, which fully explains the proposal, stated:

"The activities of the Federal Housing Administration have had magnificent support and cooperation from the motion-picture industry, and in recent weeks we have had many requests for motion pictures which could be shown in the theaters of the country, and which would bring to the attention of audiences the significance of Better Housing and finer living.

"It is well recognized that the economic recovery which the Better Housing movement will unmistakably create, will have an important effect on the frequency with which more and more people will patronize the motion-picture theaters.

"The Federal Housing Administration, therefore, is giving serious consideration to the production of pictures under its own auspices. It is our thought that these pictures should be produced by a competent producer—be entirely free of all commercial advertising — that they should run about 600 to 900 feet—and that they be supplied free of charge to the theaters. We feel, too, that there should be a series of such films released at intervals of perhaps 2 weeks, the first film to be ready about April 1, and particularly that they should be of such a nature as to provide your regular audiences with completely instructive entertainment."

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Hundreds of enthusiastic replies have been received from theater owners, in which they state they will be glad to use the Federal Housing Administration pictures.

HOUSING ABROAD

Architects are inclined to be opportunists rather than economists. They are more interested in securing a job for the present than in interesting themselves actively in steps that, economically speaking, may result in better chances for future practice in their profession. They should be much impressed by conditions in Great Britain in connection with Housing, as these suggest similar conditions in the United States. Some of these conditions to which I refer are clearly set forth by Herbert N. Casson, editor of "Efficiency Magazine," London, in an article in "Nation's Business."

Great Britain is now having a house building boom. It is said that while brickyards are working overtime, they cannot supply the demand and bricks are being imported. Eighty percent of this building is done without governmental assistance of any kind. The houses are being built by private capital and paid for on the installment plan.

The important point in all this is the fact that this has all happened since the British Government wisely decided to let housing alone. Mr. Casson points out that shortly after the war, the government took over the entire control of the matter of housing the masses. It promised to "build a million houses," to abolish the slums, to provide good housing at cheap rentals, etc. But what it actually did accomplish was the complete demoralization of the whole building business. A tremendous shortage of housing eventually resulted from governmental interference and control. Just about the same kind of thing the United States Government is at present experimenting with!

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History repeats itself, but we take no heed. What happened in Great Britain will certainly happen in America unless we wake up. The Federal government, as well as local governments, have well defined functions. These, however, do not include entering into competitive business of any kind. Architects are among those who should combat this practice.

Since Mr. Casson's article was published, the newspapers report a new bill before Parliament which if passed as reported will result in another experiment in socialism by England, but not as objectionable as the present government building program in America. England proposes in this bill to eliminate the worst features of the overcrowding which resulted in part by her now abandoned government building scheme. The proposed law regulates the number of persons who may lawfully occupy a given housing space, compelling either private capital or the local authorities to make lawful provisions for housing the very poor. Where necessary, it is proposed that a portion of the required funds be provided by a combination of local and national subsidies to the builders covering a period of forty years. This will not result in competition by national government in the building business, but rather in assistance and encouragement to private enterprise in a class of building that is not remunerative. The idea seems to have merit.—*Victor A. Matteson in Bulletin Illinois Society of Architects.*

BIDS WANTED

Bids are to be received by the Bureau of Reclamation, Ontario, Oregon, until 10 a.m., March 28th, for the construction of structures, South canal, station O to station 736, Succor Creek Division, Owyhee Project, Oregon-Idaho.

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OIL STATIONS

Plans are being prepared by the Rio Grande Gasoline Refining Company, 46th Avenue and Russell Street, Oakland, for a reinforced concrete and brick veneer service station to be erected at Chestnut Street and University Avenue, Berkeley, at an estimated cost of $7500. J. H. Tarman, Ray Building, will be the contractor. The owners have petitioned the city planning commission to rezone the site to permit construction.

The same contractor has been awarded a contract at about $7500 by the Sinclair Refining Company, for the erection of a service station in the 500 block on 3rd Street, Oakland.

A total of 15 stations are to be erected in the Bay district for the Rio Grande people.

ENGINEERS NAMED

L. H. Nishkian, Harold Hammill and Earl Russell, structural engineers, 525 Market Street, San Francisco, have been commissioned by the Alameda board of education to make a survey and report on the condition of Alameda schools in reference to earthquakes. It is proposed to call a bond election to provide funds to make such changes as are recommended.

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ARCHITECTURAL TERRA COTTA

N. Clark & Sons, 116 Natoma Street, San Francisco — 7

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The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle — I

"Brownskin," distributed by Forderer Cornice Works, 269 Potrero Avenue, San Francisco — 72

CEMENT

Portland Cement Association, 564 Market Street, San Francisco; 816 West Fifth Street, Los Angeles; 146 West Fifth Street, Portland; 518 Exchange Building, Seattle — Back cover

"Golden Gate" and "Old Mission," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego — Third cover

CEMENT TESTS—CHEMICAL ENGINEERS

Robert W. Hunt Co., 251 Kearny Street, San Francisco — 74

CEMENT—COLOR

"Golden Gate Tan Cement," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego — Third cover

CEMENT-WHITE

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CONCRETE AGGREGATES

Golden Gate Atlas Materials Company, Sixteenth and Harrison Streets, San Francisco — 73

John Cassaretto, Sixth and Channel Streets, San Francisco — 75

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CONTRACTORS—GENERAL

MacDonald & Kahn, Financial Center Bldg., San Francisco — 74

Lindgren & Swinerton, Inc., Standard Oil Building, San Francisco — 68

Dinwiddie Construction Co., Crocker Bldg., San Francisco — 75

Clinton Construction Company, 923 Folsom Street, San Francisco — 75

Anderson & Ringrose, 320 Market Street, San Francisco — 72

G. P. W. Jensen, 320 Market Street, San Francisco — 74

Monson Bros., 475 Sixth Street, San Francisco — 78

P. F. Reilly, 730 Ellis Street, San Francisco — 72

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Calaveras Cement Co. — 2d Cover

Johnson Service Co. — 3

N. Clark & Son — 7

Gladding, McBean & Co. — 8

Dalmo Sales Co. — 78

University of California Press — 78

S. E. Scott, Angier Corp. — 79

Patterson Bros. — 79

COPPER PIPE—STREAMLINE — Page

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The Sisalkraft Company, 205 W. Wacker Drive, Chicago, Ill., and 55 New Montgomery Street, San Francisco 74

The Paraffine Companies, Inc., San Francisco, Oakland, Los Angeles, Portland and Seattle 1

DOORS—HOLLOW METAL

Forderer Cornice Works, Potrero Avenue, San Francisco 72

Kawneer Mfg. Co., Eighth and Dwight Streets, Berkeley 71

DRAIN PIPE AND FITTINGS

"Corrosion" Acid Proof, manufactured by Pacific Foundry Co., 3100 Nineteenth Street, San Francisco, and 470 E. Third Street, Los Angeles 64

DRINKING FOUNTAINS

Haws Sanitary Drinking Faucet Co., 1808 Harmon Street, Berkeley; American Seating Co., San Francisco, Los Angeles and Phoenix 66

ENGINEERS—MECHANICAL

Hunter & Hudson, 41 Sutter Street, San Francisco 72

ELECTRIC AIR AND WATER HEATERS

Sandoval Sales Company, 557 Market Street, San Francisco 70

ELECTRICAL ADVICE

Pacific Coast Electrical Bureau, 447 Sutter Street, San Francisco, and 601 W. Fifth Street, Los Angeles 69

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FIXTURES—BANK, OFFICE, STORE

Mullen Manufacturing Co., 64 Rausch Street, San Francisco 75

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HARDWARE

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Having been inactive for the past two years, this publication will be again available in a revised edition —Vol. 7, No. 6.

The Architectural profession will welcome this semi-annual directory which has done signal service for the California architect since 1927.

Address all inquiries to:
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832 West Fifth Street
Los Angeles, California

Page

W. S. Dickey Clay Mfg. Co., 116 New Montgomery Street, San Francisco; factory, Niles, Calif.; yards, 7th and Hooper Streets, San Francisco, and 105 Jackson Street, Oakland 72

INSPECTION AND TESTS

Robert W. Hunt Co., 251 Kearny St., San Francisco 74

LACQUERS

The Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle 1
Bass-Heuter Paint Company, San Francisco, and all principal Coast cities ..... *
National Lead Co. of California, San Francisco, Los Angeles, Portland and Seattle ..... *
W. P. Fuller & Co., 301 Mission Street, San Francisco. Branches and dealers throughout the West ..... *

LIME

Boulder Canyon dolomitic hydrated lime, manufactured by United States Lime Products Corp., 85 Second Street, San Francisco; 1840 E. Twenty-fifth Street, Los Angeles ..... *

LINOLEUM

The Paraffine Companies, factory in Oakland; office, 475 Brannan Street, San Francisco 1
Sloan-Blabon linoleum, sold by California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70

LUMBER

Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara 73
Smith Lumber Company, Nineteenth Avenue and Estuary, Oakland 73
Melrose Lumber & Supply Co., Forty-sixth Avenue and E. Twelfth Street, Oakland 72
E. K. Wood Lumber Company, 4701 Santa Fe Avenue, Los Angeles; 1 Drumm Street, San Francisco; Frederick and King Streets, Oakland 6

MAIL CHUTES

Cutler Mail Chute Co., represented by Price Building Specialties Co., 683 Howard Street, San Francisco, and B. L. Wilcox Bldg. Specialties, 2071 Laura Avenue, Huntington Park, Los Angeles ..... *

MARBLE

American Marble Co., P. O. Box 578, South San Francisco ..... *
Joseph Musto Sons-Keenan Co., 535 N. Point Street, San Francisco 72

MILLWORK

Melrose Lumber & Supply Company, Forty-sixth Avenue and E. Twelfth Street, Oakland 72
Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; Los Angeles and Santa Clara 73
Smith Lumber Company, Nineteenth Avenue and Estuary, Oakland 73

MONEL METAL

"Inco" brand, distributed on the Pacific Coast by the Pacific Foundry Company, Harrison and Eighteenth Streets, San Francisco, and Eagle Brass Foundry, Seattle 68

OIL BURNERS

S. T. Johnson Co., 585 Potrero Avenue, San Francisco; 940 Arlington Street, Oakland; 1729 Front Street, Sacramento, and 230 N. Sutter Street, Stockton 6
Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland 74

ONYX

Joseph Musto Sons-Keenan Co., 535 No. Point Street, San Francisco 72

PAINTS, OIL, LEAD

W. P. Fuller & Co., 301 Mission Street, San Francisco. Branches and dealers throughout the West ..... *
Bass-Heuter Paint Company, San Francisco, and all principal Coast cities ..... *
National Lead Co. of California, San Francisco, Los Angeles, Portland and Seattle ..... *

PAINTING, DECORATING, ETC.

The Tormey Co., 563 Fulton Street, San Francisco 74

PARTITIONS—MOVABLE OFFICE

Pacific Mfg. Co., 454 Montgomery Street, San Francisco; 1315 Seventh Street, Oakland; factory at Santa Clara 73

PILES—CREOSOTED WOOD

J. H. Baxter & Co., 333 Montgomery Street, San Francisco and 601W Fifth Street, Los Angeles ..... *

PIPE-DUROLINE (cement lined)

National Duroline Pipe, manufactured by the National Tube Company, Frick Bldg., Pittsburgh, Pa. Pacific Coast Distributors: Columbia Steel Co., Russ Bldg., San Francisco 67
Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4

PIPE FITTINGS (Solder type—Streamline)

Mueller Brass Co., Norman S. Wright & Co., distributors; 41 Spear Street, San Francisco; 608 Pioneer Bldg., Seattle; 923 East Third Street, Los Angeles 6

PLASTER

"Empire" and "Reno Hardware Plaster," manufactured by Pacific Portland Cement Co., 111 Sutter Street, San Francisco; Portland, Los Angeles and San Diego ..... Third cover

Page

Boulder Canyon dolomitic hydrated lime, manufactured by United States Lime Products Corp., 85 Second St., San Francisco; 1840 E. Twenty-fifth St., Los Angeles ..... *

PLATE GLASS

Libbey-Owens-Ford Glass Co., Toledo, Ohio; 633 Rialto Bldg., San Francisco; 1212 Architects Bldg., Los Angeles; Mr. C. W. Holland, P. O. Box 3142, Seattle ..... *

PLUMBING FIXTURES

Mueller Co., Decatur, Ill.; San Francisco Branch, 1072 Howard Street 70

PLUMBING CONTRACTORS AND MATERIALS

Carl T. Doell Co., 467 Twenty-first Street, Oakland 73
Crane Co., all principal Coast cities 74

PRESSURE REGULATORS

Vaughn-G. E. Witt Co., 4224-28 Hollis Street, Emeryville, Oakland 74

REINFORCING STEEL

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4

ROOF MATERIALS

"Malthoid" and "Durable," also "Pabco" 10 and 20-year roofs, manufactured by the Paraffine Companies, Inc., San Francisco, Los Angeles, Oakland, Portland and Seattle 1
Gladding, McBean & Co., 660 Market Street, San Francisco; 2901 Los Feliz Boulevard, Los Angeles; 1500 First Avenue South, Seattle; 79 S. E. Taylor Street, Portland; Twenty-second and Market Streets, Oakland; 1102 N. Monroe Street, Spokane; Vancouver, B. C. 9
N. Clark & Sons, 112-116 Natoma Street, San Francisco; works, West Alameda 7

RUSTIC FENCING

California Rustic Fence Company, P. O. Box 122, Healdsburg, California ..... *

SAND, ROCK AND GRAVEL

John Cassaretto, Sixth and Channel Streets, San Francisco 75

SHADE CLOTH

California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70

SHEET METAL WORK

Forderer Cornice Works, Potrero Avenue, San Francisco 72
Guilfoy Cornice Works, 1234 Howard Street, San Francisco 73

STAINLESS STEEL PIPE AND TUBES

National Duroline Pipe, manufactured by the National Tube Company, Frick Bldg., Pittsburgh, Pa. Pacific Coast distributors: Columbia Steel Co., Russ Bldg., San Francisco 67

STEEL—STAINLESS

Republic Steel Corporation, Rialto Bldg., San Francisco; Edison Bldg., Los Angeles; Smith Tower, Seattle 73

STEEL SHEETS

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4

STEEL, STRUCTURAL

Columbia Steel Company, subsidiary of United States Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City 4
Judson Pacific Company, C. F. Weber Bldg., Mission and Second Streets, San Francisco, shops, San Francisco and Oakland 70
Pacific Coast Steel Corporation, Twentieth and Illinois Streets, San Francisco; Slawson Avenue, Los Angeles; American Bank Bldg., Portland; West Andover Street, Seattle 75

STORE FRONTS

Kawneer Mfg. Co., Eighth and Dwight Streets, Berkeley 71

TEMPERATURE REGULATION

Johnson Service Company, Milwaukee, represented on the Pacific Coast by the following branch offices: 814 Rialto Bldg., San Francisco; 153 West Avenue, 34, Los Angeles 1312 N. W. Raleigh Street, Portland, and 473 Coleman Bldg., Seattle 3

TERMITE PREVENTATIVE—WOOD PRESERVATIVE

Reilly Tar & Chemical Corp., Indianapolis, Indiana; Architects' Bldg., Los Angeles; 461 Market Street, San Francisco 66
E. K. Wood Lumber Company, No. 1 Drumm Street, San Francisco; 4701 Santa Fe Ave., Los Angeles; Frederick and King Streets, Oakland 6
J. H. Baxter & Co., 333 Montgomery Street, San Francisco, and 601 W. Fifth Street, Los Angeles 71

WINDOWS

Dalmo-Pinecraft-Automatic swing-type windows, White Pine Sash Company, Spokane 63
Kawneer Mfg. Co., West Berkeley 71
Dalmo Sales Co., San Francisco 78

WINDOW SHADES

California Shade Cloth Co., 210 Bayshore Boulevard, San Francisco 70
Wm. Volker & Co., 631 Howard Street, San Francisco 73

NOTES AND COMMENTS

[Concluded from Page 5]

Since the middle of 1931, population has increased 2,300,000. This would require 480,000 homes. Replacement during this interval would amount to 381,000 homes annually, or 952,000 for the period. This is estimated as normal replacement based on a country-wide average life of 50 years for residences. The sum of these two is 1,432,000 houses, from which should be subtracted 200,000 built in the last 2½ years. This leaves 1,232,000 homes as compared with the prior estimate of 1,221,000 as a possible shortage. If the shortage be assumed as 1,200,000 homes about 530,000 may be within the value limits of $3,000 to $7,500. For the architect there is probably no greater opportunity in the country for effective increase in economic activity than in providing better houses for the average family. This means improved construction, better utility and greater beauty at lower cost.

* * *

THE Federal Housing Administration recently announced that the Chase National Bank, of New York, was approved as mortgagee under the Mutual Mortgage Insurance Plan of the Administration. With 41 branches in New York and five in foreign cities, the bank is the largest in the United States. All 41 domestic branches can now loan for new home construction and refinancing of existing mortgages under terms of the National Housing Act.

The estimated amount of modernization and repair work reported by field offices of the Federal Housing Administration in all parts of the country, totaled $252,948,856 on February 16. This is an increase of $7,112,569 for the week. Field representatives reported that this work has been chiefly the result of the Better Housing Program.

The total amount of insured loans reported to the Administrator by private lending institutions up to February 16 reached $39,688,320, an increase of $1,218,335 for the week. This amount covered 94,147 loans, an increase of 2,797 for the week. Sixteen new insurance contracts were issued during the week to financial institutions, entitling them to lend under the National Housing Act. This brings the number of cooperating lending institutions to 12,472.

On February 16, there were 5,803 community campaigns organized or in the process of organization. This represents an increase of 118 communities over the previous week's total.